

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	NMAP1825459428
District RP	2RP-4967
Facility ID	N/A
Application ID	pMAP1825459097

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # (assigned by OCD)
Contact mailing address 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.151330 _____ Longitude -103.96267 _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Elk Wallow 11 State #001H Battery	Site Type Tank Battery
Date Release Discovered 8/27/18 at 2pm	API# 30-015-37588

Unit Letter	Section	Township	Range	County
D	11	25S	29E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 33.12	Volume Recovered (bbls) 21.56
☒ Produced Water	Volume Released (bbls) 723.13	Volume Recovered (bbls) 468.44
	Is the concentration of dissolved chloride 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

Battery was struck by lightning which caused a fire that spread to all the tanks in the west tank battery containment. All the associated wells had already been shut at the time of the event. The fire department extinguished the fire.

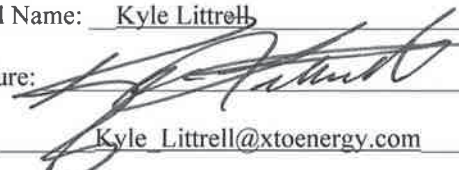
State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume, excluding gases, of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, Amy Ruth, contacted Mike Bratcher (NMOCD), Maria Pruett (NMOCD), Ryan Mann (SLO), By email on August 28, 2018 at 8:57 am	

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:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Coordinator</u>
Signature: 	Date: <u>9/11/2018</u>
email: <u>Kyle.Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
OCD Only	
Received by: 	Date: <u>09/11/18</u>

Incident ID	NMAP1825459428
District RP	2RP-4967
Facility ID	
Application ID	pMAP1825459097

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>51-100</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☒ Yes ☐ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

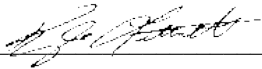
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico
Oil Conservation Division

Page 4

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Facility ID	
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Printed Name: Kyle Littrell Title: SH&E SupervisorSignature:  Date: 2/27/2020email: Kyle_Littrell@xtoenergy.com Telephone: (432)-221-7331**OCD Only**Received by: Cristina Eads Date: 02/28/2020

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Remediation Plan

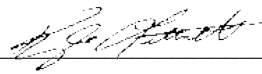
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

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

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

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

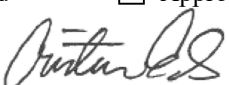
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public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

Printed Name: Kyle Littrell Title: SH&E Supervisor
Signature:  Date: 2/27/2020
email: kyle.littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: Cristina Eads Date: 02/28/2020

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

Signature:  Date: _____



LT Environmental, Inc.

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

February 27, 2020

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

**RE: Deferral Request
Elk Wallow 11 State #001H Battery
Remediation Permit Number 2RP-4967
Incident Number NMAP1825459428
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Deferral Request detailing site assessment, excavation, and soil sampling activities at the Elk Wallow 11 State #001H Battery (Site) in Unit D, Section 11, Township 25 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the remediation activities was to address impacts to soil following a release of crude oil and produced water on August 27, 2018, at the Site. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, XTO is submitting this Deferral Request and respectfully requesting no further action (NFA) for Remediation Permit (RP) 2RP-4967 until the Site is reconstructed, and/or the Site is abandoned.

RELEASE BACKGROUND

On August 27, 2018, the battery at the Site was struck by lightning, causing a fire that spread to the aboveground storage tanks (ASTs) in the western tank battery containment. The associated production wells and equipment were shut down at the time of the event. The incident caused a release of 723.13 barrels (bbls) of produced water and 33.12 bbls of crude oil. The released fluids pooled in the northwestern corner of the pad and flowed northwest from the pad through a drainage for approximately 690 feet. The release impacted approximately 8,360 square feet of the caliche well pad and continued to flow west-northwest, impacting approximately 12,800 square feet of the pasture along a dry wash. The release originated on land owned by the New Mexico State Land Office (SLO), and also impacted land owned by the Bureau of Land Management (BLM). A vacuum truck was dispatched to the Site to recover free-standing fluids; approximately 468.44 bbls of produced water and 21.56 bbls of crude oil were recovered. XTO gave immediate verbal notification to the New Mexico Oil Conservation Division (NMOCD) and, on September 11, 2018, reported the release on a Release Notification and Corrective Action Form C-141 (Form C-141). NMOCD subsequently assigned RP Number 2RP-4967.



On behalf of XTO, LTE submitted a Remediation Work Plan on November 29, 2018, proposing a freshwater flushing program that would address impacts in the drainage with minimal surface disturbance. The NMOCD and BLM determined the dry wash should not be considered a significant watercourse, but was created as a result of stormwater runoff from the well pad. As a result, the agencies denied the flushing proposal and requested removal of the impacts identified in the Remediation Work Plan.

Per the agencies' request, a second Remediation Work Plan was submitted on April 26, 2019, detailing remediation activities to date and proposed additional remediation activities in the pasture area along the dry wash north-northwest of the well pad. The NMOCD approved this Remediation Work Plan on May 8, 2019.

In addition, XTO submitted a Right of Entry permit (ROE) to the SLO on April 25, 2019. The SLO granted access to the pasture on July 31, 2019. An archeological survey was conducted in order to comply with the BLM disturbance access approval. The BLM granted disturbance access on October 24, 2019.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15929.12) of the New Mexico Administrative Code (NMAC) as described in the approved Remediation Work Plan dated April 26, 2019. Site receptors are shown in Figure 01.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On September 25, 2018, LTE conducted an initial Site assessment and collected preliminary soil samples SS01 through SS06. Subsequent vertical delineation soil sampling was conducted on September 28 and October 3, 2018. LTE personnel collected delineation soil samples PH03/PH03A through PH09A/PH09B. Delineation soil samples PH01 and PH02 were not collected and sample naming began with PH03. Soil sample collection and laboratory analytical results are



detailed in the April 26, 2019, Remediation Work Plan. Preliminary and delineation soil sample locations are shown on Figure 2. The laboratory analytical results are summarized in Table 1 and the laboratory data reports are provided in Attachment 3.

ON-PAD REMEDIATION ACTIVITIES

Prior to the submission of the April 26, 2019 Remediation Work Plan, the damaged tank battery was removed from the Site and LTE personnel excavated an estimated 1,000 cubic yards of impacted soil from the well pad. Following the removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing to form one composite sample. Twenty-one floor samples, FS01 through FS21, and 15 sidewall samples, SW01 through SW15, were collected for confirmation purposes with locations presented on Figure 3A. The maximum excavation depth of 14 feet bgs was located in the area of floor sample FS20. The area around sidewall samples SW08 and SW10, which indicated elevated chloride concentrations, was further excavated to the western extent and confirmation of removal of impacted soil was defined by the chloride concentrations below Closure Criteria in sidewall samples SW11 and SW12. The area around sidewall sample SW14, with concentrations exceeding the Closure Criteria, was excavated when remediation activities in the pasture began.

All final confirmation samples indicated concentrations of benzene, BTEX, TPH, and chloride were below the Closure Criteria with the exception of floor sample FS11, which indicated chloride concentrations exceeded Closure Criteria. Floor sample FS11, collected at 3.5 feet bgs, is located immediately adjacent to electrical equipment and will be left in place in compliance with the XTO safety policy regarding earth moving activities within two feet of active production equipment and pipelines. The excavation could not be taken deeper without sloping the sidewalls which would have required excavating within two feet of active electrical equipment.

The excavated material was transported to R360 Environmental Solutions in Orla, Texas. Floor sample and sidewall sample soil locations are depicted on Figure 3A. The laboratory analytical results are summarized in Table 1 and the laboratory analytical reports are included in Attachment 3. Photographic documentation was also conducted and photos are provided in Attachment 2.

OFF-PAD REMEDIATION ACTIVITIES

From October 30, 2019, through January 3, 2020, LTE oversaw multi-phased excavation activities to remediate off-pad impacted soil as indicated by visual observations, field screening results, and preliminary and delineation soil sample analytical results. Excavation activities were performed using track-mounted excavators, loaders, and transport vehicles. Soil from the



excavation floor and sidewalls was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated PID and Hach® chloride QuanTab® test strips, respectively.

Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing to form one composite sample. A total of 59 composite floor soil samples and 28 composite sidewall samples were collected from the excavation at depths ranging from ground surface to a maximum depth of 10 feet bgs. In general, the deeper portions of the excavation were in the center of the drainage. The excavation soil samples were collected, handled, and analyzed as described above. The locations of the final off-pad excavation confirmation samples are presented on Figures 3B and 3C.

The final off-pad excavation extent measured approximately 20,475 square feet in area. A total of approximately 6,300 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at R360 Environmental Solutions in Orla, Texas.

Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria after conducting multiple phases of excavation activities. The initial soil samples in the area of floor samples FS22, FS24, FS25, FS48, and FS71, collected at depths ranging from five feet bgs to 7.5 feet bgs, reported TPH and chloride concentrations exceeding the Closure Criteria. After further excavation, second depth soil samples were collected from floor samples FS22A and FS25B, FS48A, FS51, FS71A, at depths ranging from 7 to 10.5 feet bgs, which indicated TPH and chloride concentrations were compliant with the Closure Criteria. The area of sidewall soil sample SW20 reported chloride concentrations exceeding Closure Criteria. The sidewall was excavated further to the northeast. After further excavation, the sidewall soil sample SW45 indicated chloride concentrations of the remaining soil was in compliance with the Closure Criteria. The analytical results are summarized in Table 1 and the laboratory analytical reports are provided in Attachment 3.

DEFERRAL REQUEST

Following the battery lightning strike which caused a fire that spread to the ASTs in the western tank battery containment and western drainage, XTO conducted both on-pad and off-pad assessment, delineation, and excavation activities. The release impacted approximately 8,360 square feet of caliche on-pad and approximately 12,800 square feet of soil along the off-pad drainage.

An estimated 8,220 cubic yards of impacted soil were excavated from the Site; however, residual chloride-impacted soil was left in place on pad in the area of floor sample FS11 where electrical equipment is located. XTO maintains a safety policy regarding earth-moving activities within two



Bratcher, M.
Page 5

feet of active pipelines, electrical equipment, and flow lines. Floor sample FS11 is delineated laterally by soil sample SW06 to the north, FS06 to the south, SW07 to the east, and SW09 to the west. Additionally, floor sample FS06 provides vertical delineation at 7 feet bgs. An estimated 60 cubic yards of impacted soil remains in place on-pad, assuming a maximum depth of seven feet bgs of impacted soil.

XTO requests permission to defer final remediation for this release event and to complete on-pad remediation in the area of floor sample FS11 during any future major construction and alteration or final abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in an imminent risk to human health, the environment, or groundwater. No saturated soil remains in place and mass source removal has occurred. Remaining impact is delineated vertically and laterally. Excavation of impacted soil have mitigated impacts at this Site.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Kevin M. Axe, P.G.
Senior Geologist

Ashley L. Ager, P.G.
Senior Geologist

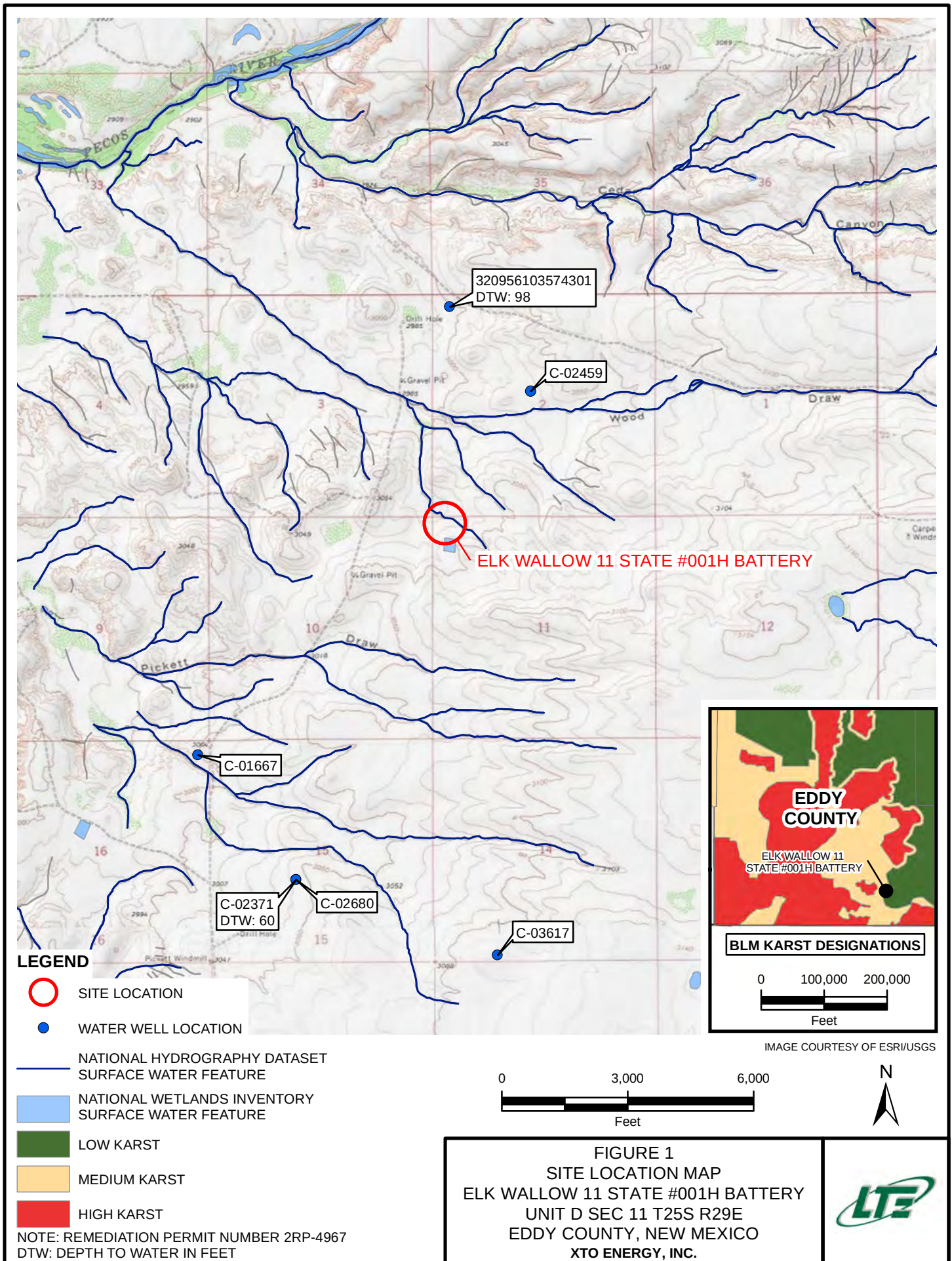
cc: Kyle Littrell, XTO
United States Bureau of Land Management – New Mexico
Ryan Mann, SLO
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Appendices:

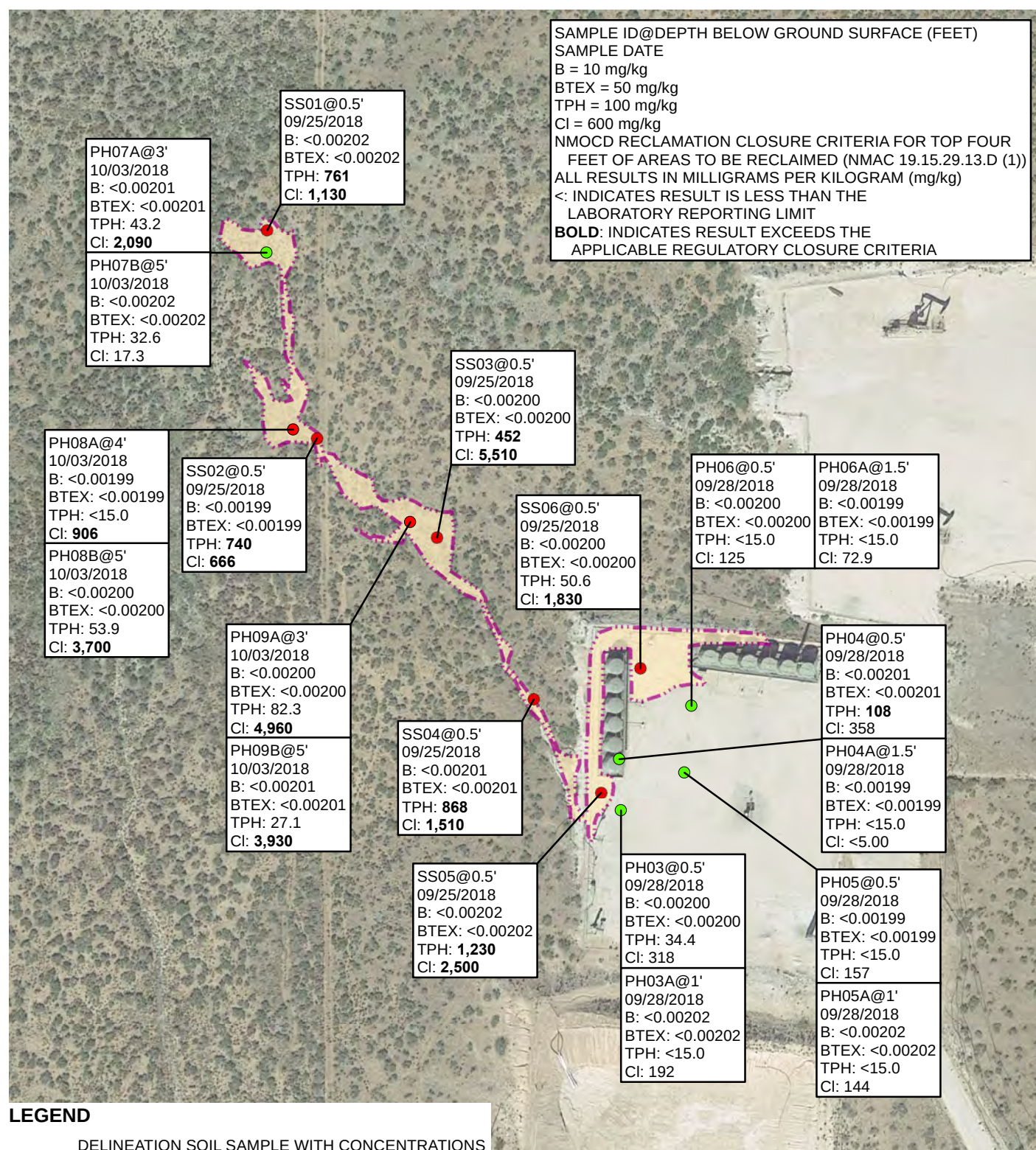
Figure 1	Site Location Map
Figure 2	Delineation Soil Sample Locations
Figure 3A	Excavation Soil Sample Locations
Figure 3B	Excavation Soil Sample Locations
Figure 3C	Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Lithologic/Soil Sampling Logs
Attachment 2	Photographic Log
Attachment 3	Laboratory Analytical Reports

FIGURES





SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 B = 10 mg/kg
 BTEX = 50 mg/kg
 TPH = 100 mg/kg
 Cl = 600 mg/kg
 NMOCD RECLAMATION CLOSURE CRITERIA FOR TOP FOUR
 FEET OF AREAS TO BE RECLAIMED (NMAC 19.15.29.13.D (1))
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE REGULATORY CLOSURE CRITERIA



LEGEND

- DELINEATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE CLOSURE CRITERIA
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

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-4967

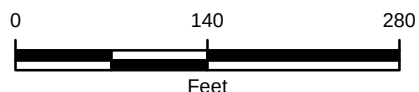
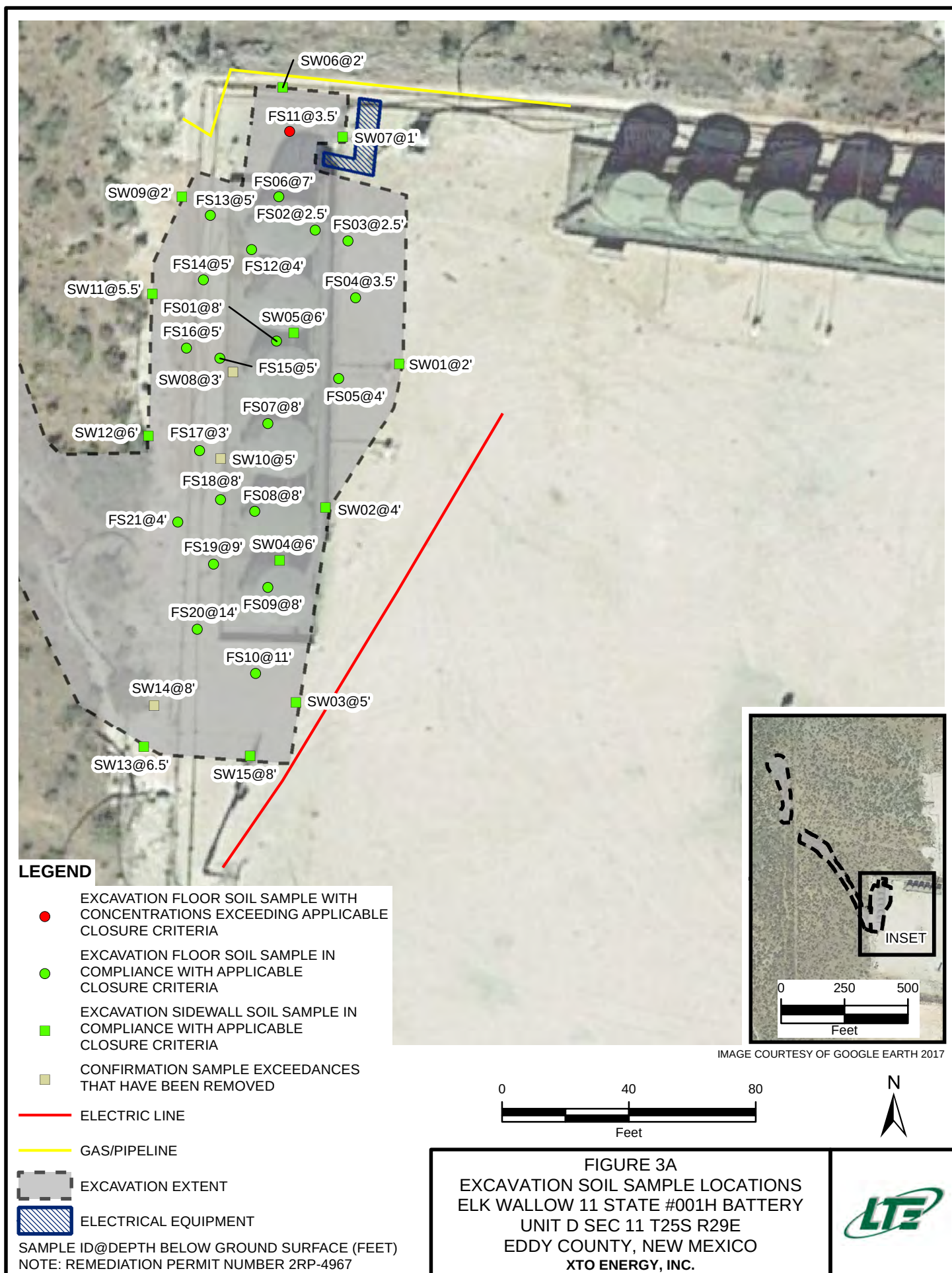


FIGURE 2
 DELINEATION SOIL SAMPLE LOCATIONS
 ELK WALLOW 11 STATE #001H BATTERY
 UNIT D SEC 11 T25S R29E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.





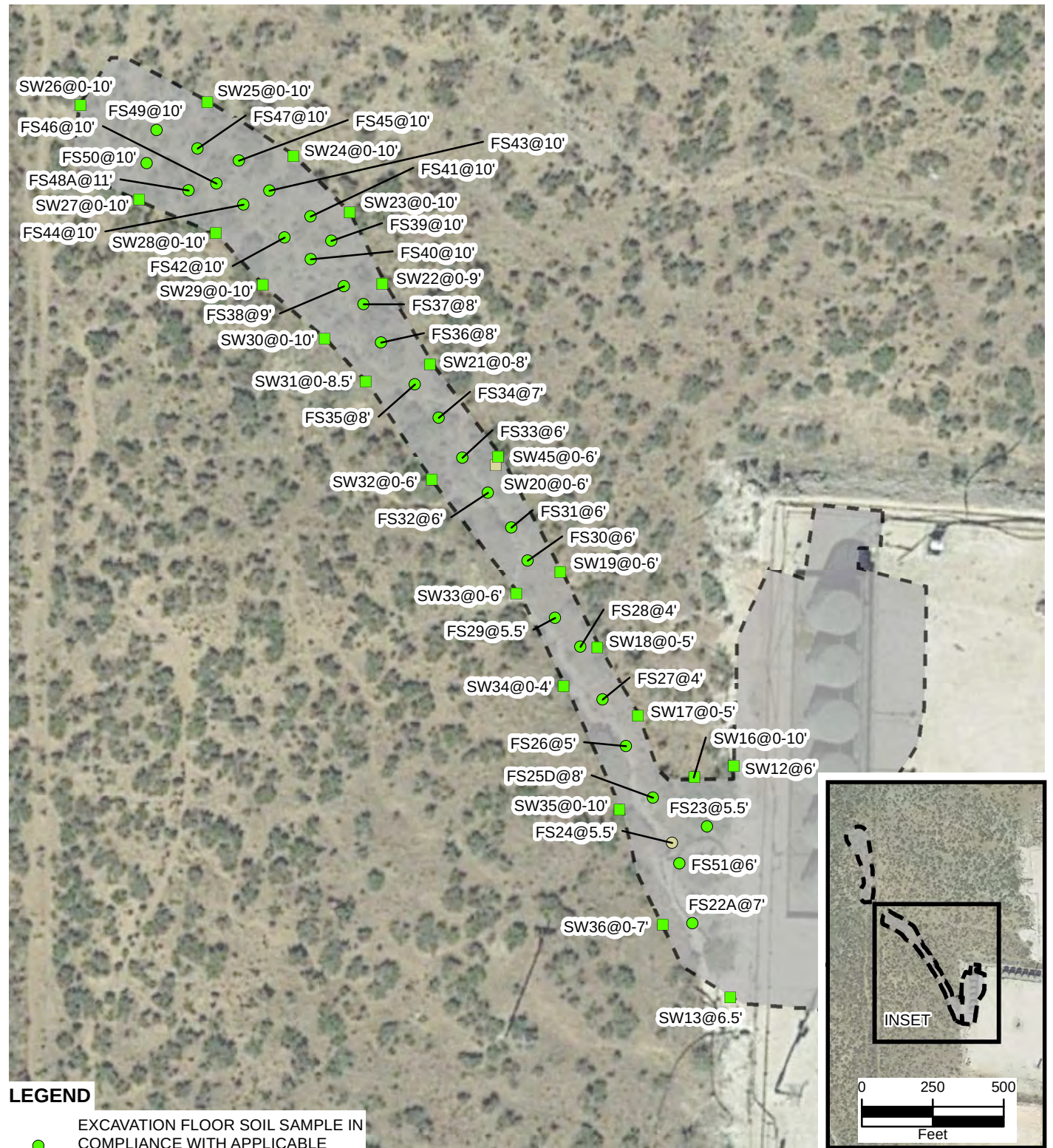
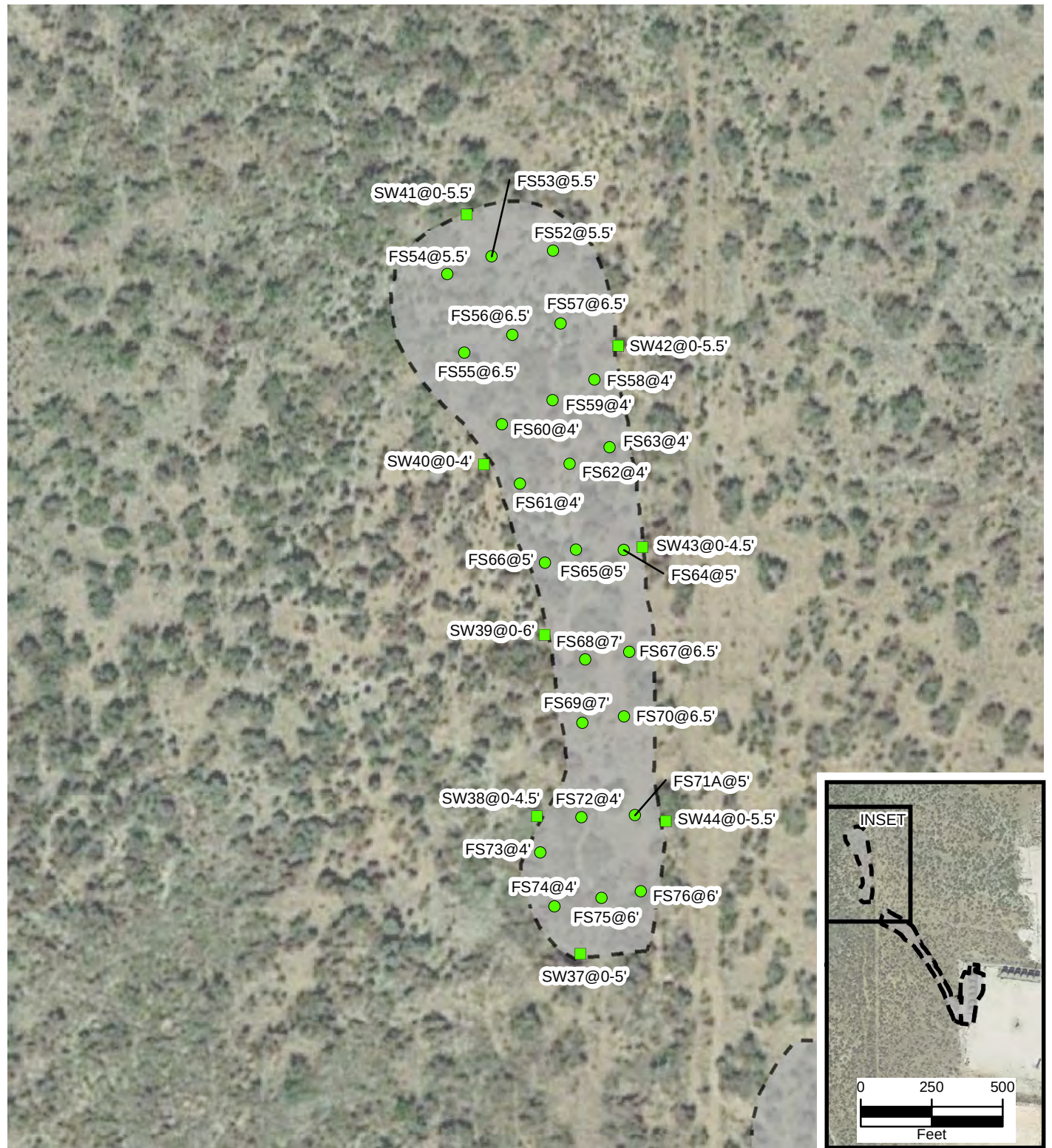


FIGURE 3B
EXCAVATION SOIL SAMPLE LOCATIONS
ELK WALLOW 11 STATE #001H BATTERY
UNIT D SEC 11 T25S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



**LEGEND**

● EXCAVATION FLOOR SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

■ EXCAVATION SIDEWALL SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

▬ EXCAVATION EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-4967

0 50 100
Feet



FIGURE 3C
EXCAVATION SOIL SAMPLE LOCATIONS
ELK WALLOW 11 STATE #001H BATTERY
UNIT D SEC 11 T25S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



TABLES



**TABLE 1
SOIL ANALYTICAL RESULTS**

**ELK WALLOW 11 STATE #001H BATTERY
REMEDATION PERMIT NUMBER 2RP-4967
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)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
SS01	0.5	09/25/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	744	17.2	744	761	1,130
SS02	0.5	09/25/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	714	25.9	714	740	666
SS03	0.5	09/25/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	452	<15.0	452	452	5,510
SS04	0.5	09/25/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	815	53.4	815	868	1,510
SS05	0.5	09/25/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	1,180	53.9	452	1,230	2,500
SS06	0.5	09/25/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	50.6	<15.0	815	50.6	1,830
PH03	0.5	09/28/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	34.4	<15.0	<15.0	34.4	318
PH03A	1	09/28/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	192
PH04	0.5	09/28/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	108	<14.9	<14.9	108	358
PH04A	1.5	09/28/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH05	0.5	09/28/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	157
PH05A	1	09/28/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	144
PH06	0.5	09/28/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	125
PH06A	1.5	09/28/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	72.9
PH07A	3	10/03/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	43.2	<15.0	43.2	43.2	2,090
PH07B	5	10/03/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	32.6	<15.0	32.6	32.6	17.3
PH08A	4	10/03/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	906
PH08B	5	10/03/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	53.9	<15.0	53.9	53.9	3,700
PH09A	3	10/03/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	64.9	17.4	64.9	82.3	4,960
PH09B	5	10/03/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	27.1	<15.0	27.1	27.1	3,930
FS01	8	10/03/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	277
FS02	2.5	10/03/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	64.9	<15.0	174
FS03	2.5	10/03/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	39.0	<14.9	43.2	39.0	66.0



**TABLE 1
SOIL ANALYTICAL RESULTS**

**ELK WALLOW 11 STATE #001H BATTERY
REMEDIATION PERMIT NUMBER 2RP-4967
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)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
FS04	3.5	10/03/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	32.6	<15.0	266
FS05	4	10/03/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	291
FS06	7	10/04/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	53.9	<15.0	107
FS07	8	10/04/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	64.9	<15.0	187
FS08	8	10/05/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	28.0
FS09	8	10/05/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	19.3	<15.0	<15.0	19.3	19.3	204
FS10	11	10/08/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	108
FS11	3.5	10/11/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	713
FS12	4	10/11/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	289
FS13	5	10/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	392
FS14	5	10/12/2018	<0.00202	<0.00202	<0.00202	.0184	.0184	<15.0	<15.0	<15.0	<15.0	<15.0	403
FS15	5	10/12/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	288
FS16	5	10/12/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	299
FS17	3	10/15/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	352
FS18	8	10/18/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	488
FS19	9	10/18/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	551
FS20	14	10/18/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	493
FS21	4	10/18/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	279
FS22	5	10/30/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.1	<50.1	<50.1	<50.1	<50.1	794
FS22A	7	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0	105
FS23	5.5	10/30/2019	<0.00101	<0.00101	0.00736	0.0230	0.0303	<50.3	<50.3	<50.3	<50.3	<50.3	355
FS23A	7	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	138
FS24	5.5	10/30/2019	<0.0102	<0.0102	<0.0102	0.0906	0.0906	182	3,280	238	3,460	3,700	1,370



**TABLE 1
SOIL ANALYTICAL RESULTS**

**ELK WALLOW 11 STATE #001H BATTERY
REMEDATION PERMIT NUMBER 2RP-4967
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)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
FS25	5.5	10/30/2019	<0.00101	<0.00101	0.0166	0.0547	0.0713	157	2,780	221	2,940	3,160	1,240
FS25A	7.5	11/14/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	1,160
FS25B	8	01/03/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	201
FS26	5	10/30/2019	<0.00100	<0.00100	<0.00100	0.0150	0.0150	<49.8	98.8	<49.8	98.8	98.8	476
FS27	4	10/30/2019	<0.00102	<0.00102	<0.00102	<0.00102	<0.00102	<50.2	<50.2	<50.2	<50.2	<50.2	346
FS28	4	10/30/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	117
FS29	5.5	10/31/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	84.2
FS30	6	10/31/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	115
FS31	6	10/31/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	38.5
FS32	6	10/31/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<49.8	<49.8	<49.8	<49.8	<49.8	19.1
FS33	6	10/31/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<49.8	<49.8	<49.8	<49.8	<49.8	50.0
FS34	7	10/31/2019	<0.000986	<0.000986	<0.000986	<0.000986	<0.000986	<50.1	<50.1	<50.1	<50.1	<50.1	<10.0
FS35	8	10/31/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<49.8	<49.8	<49.8	<49.8	<49.8	186
FS36	8	10/31/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	25.1
FS37	8	11/01/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	27.3
FS38	9	11/01/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0	16.9
FS39	10	11/01/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.9	<49.9	<49.9	<49.9	<49.9	20.9
FS40	10	11/01/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	18.2
FS41	10	11/01/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	11.4
FS42	10	11/01/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	<9.98
FS43	10	11/01/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	13.4
FS44	10	11/01/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	<9.86
FS45	10	11/01/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.3	<50.3	<50.3	<50.3	<50.3	211



**TABLE 1
SOIL ANALYTICAL RESULTS**

**ELK WALLOW 11 STATE #001H BATTERY
REMEDATION PERMIT NUMBER 2RP-4967
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)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
FS46	10	11/01/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.9	<49.9	<49.9	<49.9	<49.9	127
FS47	10	11/01/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	241
FS48	10	11/01/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	627
FS48A	10.5	01/03/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	<9.98
FS49	10	11/01/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	<10.0
FS50	10	11/01/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.9	<49.9	<49.9	<49.9	<49.9	383
FS51	6.5	11/08/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	26.6
FS52	5.5	11/11/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<50.1	<50.1	<50.1	<50.1	<50.1	131
FS53	5.5	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	289
FS54	5.5	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	131
FS55	6.5	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	27.4
FS56	6.5	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	146
FS57	6.5	11/11/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.1	<50.1	<50.1	<50.1	<50.1	153
FS58	4	11/11/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<50.0	<50.0	<50.0	<50.0	<50.0	253
FS59	4	11/11/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.0	<50.0	<50.0	<50.0	<50.0	253
FS60	4	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	20.6
FS61	4	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	17.3
FS62	4	11/11/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<49.9	<49.9	<49.9	<49.9	<49.9	17.8
FS63	4	11/11/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.2	<50.2	<50.2	<50.2	<50.2	48.0
FS64	5	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	19.2
FS65	5	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	302
FS66	5	11/11/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<50.1	<50.1	<50.1	<50.1	<50.1	22.2
FS67	6.5	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0	59.6



TABLE 1
SOIL ANALYTICAL RESULTS

ELK WALLOW 11 STATE #001H BATTERY
REMEDIATION PERMIT NUMBER 2RP-4967
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)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
FS68	7	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	35.4
FS69	7	11/11/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.2	<50.2	<50.2	<50.2	<50.2	25.1
FS70	6.5	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	15.1
FS71	4	11/11/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.3	<50.3	<50.3	<50.3	<50.3	819
FS71A	5	01/03/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	18.1
FS72	4	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	237
FS73	4	11/11/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.2	<50.2	<50.2	<50.2	<50.2	96.1
FS74	4	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	189.0
FS75	6	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	<10.0
FS76	6	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	105
SW01	2	10/04/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	43.2	<15.0	332
SW02	4	10/05/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	12.5
SW03	5	10/08/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	147
SW04	6	10/08/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	9.12
SW05	6	10/09/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	108
SW06	2	10/11/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	385
SW07	1	10/11/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	339
SW08	3	10/12/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	3,620
SW09	2	10/12/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	197
SW10	5	10/15/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	726
SW11	5.5	10/18/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	449
SW12	6	10/18/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	475
SW13	6.5	10/18/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	493



**TABLE 1
SOIL ANALYTICAL RESULTS**

**ELK WALLOW 11 STATE #001H BATTERY
REMEDATION PERMIT NUMBER 2RP-4967
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)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
SW14	8	10/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	774
SW15	8	10/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	430
SW16	0 - 10	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	190
SW17	0 - 5	11/08/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.2	<50.2	<50.2	<50.2	<50.2	107
SW18	0 - 5	11/08/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	32.3
SW19	0 - 6	11/08/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.2	<50.2	<50.2	<50.2	<50.2	371
SW20	0 - 6	11/08/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.2	<50.2	<50.2	<50.2	<50.2	958
SW21	0 - 8	11/08/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.1	<50.1	<50.1	<50.1	<50.1	403
SW22	0 - 9	11/08/2019	<0.000988	<0.000988	<0.000988	<0.000988	<0.000988	<50.3	<50.3	<50.3	<50.3	<50.3	332
SW23	0 - 10	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.8	<49.8	<49.8	<49.8	<49.8	220
SW24	0 - 10	11/08/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	10.6
SW25	0 - 10	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	140
SW26	0 - 10	11/08/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	187
SW27	0 - 10	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	<10.1
SW28	0 - 10	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	<9.98
SW29	0 - 10	11/11/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.1	<50.1	<50.1	<50.1	<50.1	38.1
SW30	0 - 10	11/11/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.2	<50.2	<50.2	<50.2	<50.2	30.2
SW31	0 - 8.5	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	10.8
SW32	0 - 6	11/11/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.3	<50.3	<50.3	<50.3	<50.3	63.0
SW33	0 - 6	11/11/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<50.0	<50.0	<50.0	<50.0	<50.0	27.0
SW34	0 - 4	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	<50.0	<50.0	<50.0	<50.0	<10.1
SW35	0 - 10	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	209
SW36	0 - 7	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	248



**TABLE 1
SOIL ANALYTICAL RESULTS**

**ELK WALLOW 11 STATE #001H BATTERY
REMEDIATION PERMIT NUMBER 2RP-4967
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)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
SW37	0 - 5	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	122
SW38	0 - 4.5	11/11/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.1	<50.1	<50.1	<50.1	<50.1	35.9
SW39	0 - 6	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	<9.94
SW40	0 - 4	11/11/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.1	<50.1	<50.1	<50.1	<50.1	<10.0
SW41	0 - 5.5	11/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	<50.0	<50.0	<50.0	<50.0	193
SW42	0 - 5.5	11/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	228
SW43	0 - 4.5	11/11/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.0	<50.0	<50.0	<50.0	<50.0	17.1
SW44	0 - 5.5	11/11/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.3	<50.3	<50.3	<50.3	<50.3	<9.98
SW45	0 - 6	01/29/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	566

Notes:

bgs - below ground surface
 BTEX - benzene, toluene, ethylbenzene, and total xylenes
 DRO - diesel range organics
 GRO - gasoline range organics
 mg/kg - milligrams per kilogram

MRO - motor oil range organics
 NMAC - New Mexico Administrative Code
 NMOCD - New Mexico Oil Conservation Division
 NE - not established
 TPH - total petroleum hydrocarbons

Bold - indicates result exceeds the applicable regulatory standard
 < - indicates result is below laboratory reporting limits
 Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018



ATTACHMENT 2: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: Southern view of the release extent on pad.



Photograph 2: View west of release extent and staining in the pasture.



Photograph 3: Northern view of the on-pad excavation.



Photograph 4: View west of the on-pad excavation in the northern corner.

PHOTOGRAPHIC LOG



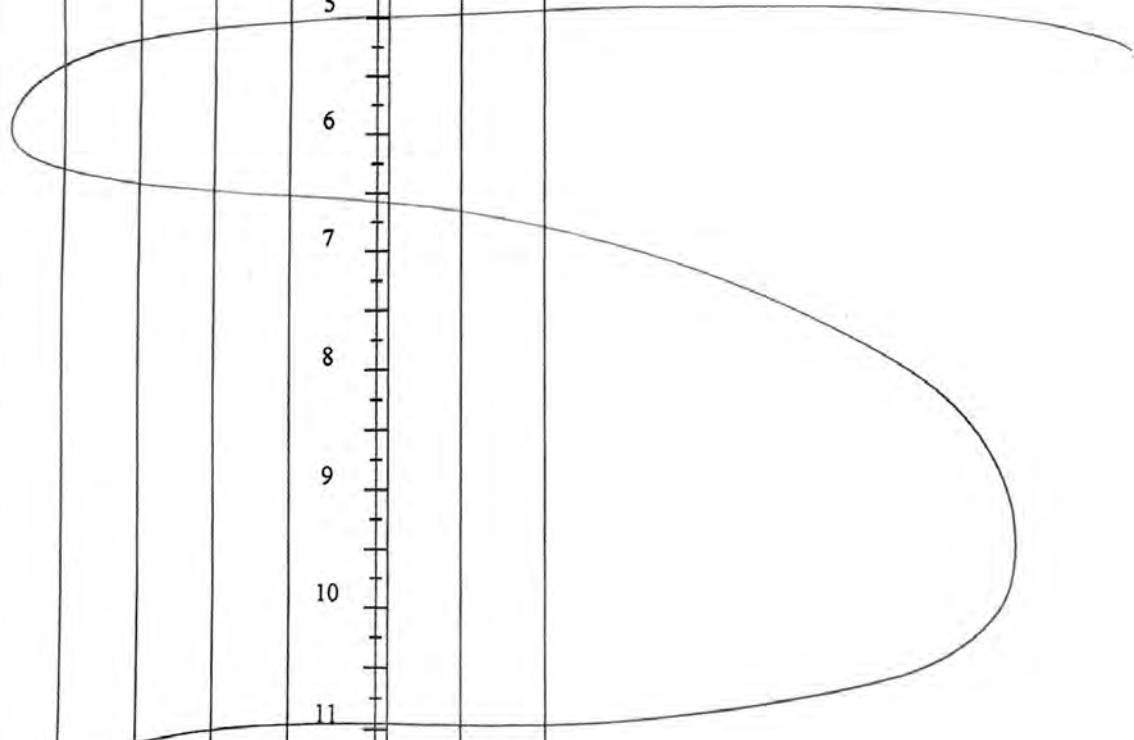
Photograph 5: View of the pasture excavation near the pad facing east.



Photograph 6: Eastern view of the western end of the pasture excavation.

ATTACHMENT 3: LITHOLOGIC SOIL SAMPLE LOGS



 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH10	Date: 10/09/19					
		Project Name: Elk Wallow II State #001H Battery	RP Number: 2RP-4967					
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:	Logged By: Robert M. Hole Diameter: 2' Method: Pothole Total Depth:					
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			CHCE white trace Brown sand 
1019	D 680	1.1	N		1	1'	S	
1020	D 520	1.5	N		2	2'	S	
1022	D 380	1.9	N		3	3'	S	
1030	D 280	2.1	N		4	4'	S	
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH11	Date: 10/09/19
		Project Name: Elk Wallow 91 state #001H Battery	RP Number: 2RP-4967
LITHOLOGIC / SOIL SAMPLING LOG			
Lat/Long:		Field Screening:	Logged By: Robert M.
		Hole Diameter: 2'	Method: Pothole
Total Depth:			
Comments:			

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1100	Pry 1800	12.3	N		1	1'	S	CHCE white trace Brown sand 
1105	D 1550	4.1	N		2	2'	S	
1110	D 1200	2.5	N		3	3'	S	
1115	D 580	2.1	N		4	4'	S	
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH12 Date: 10/09/19						
LITHOLOGIC / SOIL SAMPLING LOG		Project Name: EK Wallow II state #001H Battery RP Number: 2RP-4967						
Lat/Long:	Field Screening:	Logged By: Robert M Method: Pothole Hole Diameter: 2' Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1135	M	480	0.1	N		1'	S	SP-SM trace CHCE Brown
1140	D	1200	0.1	N		2'	S	CHCE / Brown sand White
					3	3'	S	CHCE White trace Brown sand
1145	D	1800	1.2	N		4	S	
1150	D	1800	1.3	N		5		
					6	6'	S	
1215	D	900	0.3	N		7	S	
1250	D	380	0.2	N		8		
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier: PH13

Date: 10/09/19

Project Name:
Elk Wallow II
State #001H Battery

RP Number:
2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: Robert M.

Method: Pothole

Hole Diameter: 2'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	<124	0.4	N		0			
					1	1'	S	SP-SC Brown / light Brown
M	<124	0.3	N		2	2'	S	
M	<124	0.5	N		3	3'	S	
1315 M	380	0.4	N		4	4'	S	
					5			
1320 D	3700	0.4	N		6	6'	S	CHCE White
					7			
1325 D	720	.03	N		8	8'	S	
					9			
1330 D	380	.04	N		10	10'	S	
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH14 Project Name: Elk Wallow 11 State #001H Battery	Date: 10/09/19 RP Number: 2RP-4967					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M Hole Diameter: 2'	Method: Pothole Total Depth:					
Lat/Long:		Field Screening:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1446	M	<124	0.4	N		1'	S	SP-SC light Brown
1442	M	<124	0.4	N		2'	S	
1445	M	<124	0.4	N		3'	S	
1447	M	<124	0.4	N		4'	S	
					5			
1450	M	934	0.2	N		6'	S	SP-SM Brown/tan
					7			
10/17/19 1310	M	<128		N		8'	S	SP-SM Brown tan trace Caliche
					9			
1315	M	<128		N		10'	S	SP-SM Brown tan trace Caliche
					11			
1325	M	<128		N		12'	S	CHCE trace sand tan/white
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH15	Date: 10/10/19					
		Project Name: EIK Wallow II State #0014 Battery	RP Number: 2RP-4967					
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:	Logged By: Robert M Hole Diameter: 2'					
Method: Pothole		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
0900	D	<124	1.3	N		1'	S	SP-SM Brown
0905	D	<124	1.1	N		2'	S	SP-SM Brown
					3	3'	S	SP-SM trace Clay light Brown
0910	D	<124	1.8	N		4		
0915	D	<124	1.6	N		4'	S	SP-SM trace Clay light Brown
					5			
0920	D	<124	1.3	N		6	S	SP-SM trace Clay light Brown
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier: PH16

Date: 10/10/19

Project Name:
Elk Wallow II
State #001 H Battery

RP Number:
2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: Robert M.

Method: Pothole

Hole Diameter: 2'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1000	D	<124	0.4	N	1	1'	S	SP-SM Brown
1005	D	<124	1.4	N	2	2'	S	
1010	D	<124	1.5	N	3	3'	S	
1015	D	<124	1.5	N	4	4'	S	
					5			
1020	D	<124	0.9	N	6	6'	S	CHCE/sand Poor grade white tan
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: ~~PA17~~ PA17 Date: 10/10/19						
Project Name: EIK Wallow 11 State #0014 Battery		RP Number: 2RP-4967						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M. Method: Pothole						
Lat/Long:		Field Screening:						
Hole Diameter: 2'		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1048	D	<124	2.0	N		1'	S	SP-SM Brown
1045	D	<124	1.6	N		2'	S	
1051	D	<124	1.3	N		3'	S	
1055	D	<124	1.0	N		4'	S	
					5			
1100	D	<124	1.5	N		6'	S	SP-SM trace CHCE light Brown
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH18 Date: 10/10/19						
LITHOLOGIC / SOIL SAMPLING LOG		Project Name: EIK Wallow II State #001H Battery RP Number: 2RP-4967						
Lat/Long:	Field Screening:	Logged By: Robert M. Hole Diameter: 2'						
Method: Pothole								
Total Depth:								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1110	D	<124	1.1	N		1'	S	SP-SM Brown
1115	D	<124	0.9	N		2'	S	
1120	D	<124	1.0	N		3'	S	
1125	D	<124	0.9	N		4'	S	SP-SM / CHCE Brown/white
					5			
1130	D	<124	0.9	N		6'	S	CHCE white
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
 508 West Stevens Street
 Carlsbad, New Mexico 88220
 Compliance · Engineering · Remediation

Identifier: PH19	Date: 10/10/19
Project Name: EIK Wallow II State #001H Battery	RP Number: 2 RP-4967
Logged By: Robert M.	Method: Pothole
Hole Diameter: 2'	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1200	D	<124	0.5	N	1	1'	S	SP-SM Brown
1205	D	<124	0.6	N	2	2'	S	
1210	D	<124	0.8	N	3	3'	S	
1215	D	<124	0.1	N	4	4'	S	SP-SM trace Caliche Brown tan
					5			
1220	D	<124	0.4	N	6	6'	S	CHCE white
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH20	Date: 10/10/19					
		Project Name: EIK Wallow II State #0014 Battery	RP Number: ZRP-4967					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M	Method: pothole					
Lat/Long:		Field Screening:	Hole Diameter: 2'					
Total Depth:								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1300	D	<124	0.5	N		1'	S	SP-SM Brown
9305	D	<124	0.9	N		2'	S	↓
1310	D	<124	0.8	N		3'	S	SP-SM trace Colicite Brown tan
1315	D	<124	0.8	N		4'	S	CHCE trace sand Peargrade White tan
					5			
1320	D	<124	0.4	N		6'	S	CHCE White
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: PH21		Date: 10/10/19		
LITHOLOGIC / SOIL SAMPLING LOG					Project Name: E/K Wallow 11 State #001H Battery		RP Number: 2RP-4967		
					Logged By: Robert M		Method: Pothole		
Lat/Long:			Field Screening:			Hole Diameter: 2'		Total Depth:	
Comments:									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks	
					0				
1340	D	<124	0.4		1	1'	S	SP-SM Brown ↓ CHCE White ↓	
1345	D	<124	0.3		2	2'	S		
1350	D	<124	0.2		3	3'	S		
1355	D	<124	0.2		4	4'	S		
					5				
1400	D	<124	0.1		6	6'	S		
					7				
					8				
					9				
					10				
					11				
					12				



LT Environmental, Inc.
 508 West Stevens Street
 Carlsbad, New Mexico 88220
 Compliance · Engineering · Remediation

Identifier:

PH22

Date:

10/10/19

Project Name:

BK Wallow II
 State #001H Battery

RP Number:

2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By:

Robert M.

Method:

Pothole

Hole Diameter:

2'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1420	D	<124	0.4	N	1	1'	S	SP-SM Brown
1425	D	<124	0.8	N	2	2'	S	CHCE white
1430	D	<124	0.5	N	3	3'	S	
1435	D	<124	0.6	N	4	4'	S	
					5			
1440	D	<124	0.2	N	6	6'	S	
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH23 Date: 10/10/19						
LITHOLOGIC / SOIL SAMPLING LOG		Project Name: Eik Wallow 11 State #001H Battery RP Number: 2RP-4967						
Lat/Long:	Field Screening:	Logged By: Robert M. Hole Diameter: 2' Method: Pothole Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1450	D	<124	0.8	N		1'	S	SP-SM Brown
1455	D	<124	0.9	N		2'	S	SP-SM trace caliche Brown/tan
1500	D	<124	1.2	N		3'	S	CHCE White
1505	D	<124	1.0	N		4'	S	
					5			
1510	D	<124	0.7	N		6'	S	
					7			
					8			
					9			
					10			
					11			
					12			



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Compliance · Engineering · Remediation

Identifier:

PH24

Date:

10/25/19

Project Name:

Elk Valley
State Buttery

RP Number:

2RP-4867

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: Elizabeth N.

Method: Pothole

Hole Diameter:

2.5"

Total Depth:

Comments:

used error factor 35% for CI testing

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
10:02	d	>112	0	n	—	1	18t S	spsm trace clay dark brown
10:05	m	324	0.1	n		2	28t S	spsm trace clay dark brown
10:10	m	>112	0.1	n		3	38t S	spSC light brown / dark brown
10:15	m	286	0.1	n		4	48t S	spSC light brown ^{tan} ~~dark~~ brown
					5			
10:35	m	248	0	n		6	68t S	spSC
					7			
10:40	d	286	0.1	n	—	8	88t S	spSC light brown → tan
					9			
	m	372	0	n	—	10	108t S	spSC brown sand / tan-pink clay
					11			
					12			



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Compliance · Engineering · Remediation

Identifier:

PH 25

Date:

10/25/19

Project Name:

611C Wallow
State Battery

RP Number:

2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By:

Method: Pit hole

Hole Diameter:

2 ft.

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1112	m	>112	1.0	N	1	1 ft	S	clay-sand brown to light brown
1115	m	>112	1.2	N	2	2 ft	S	
1120	d	194	1.0	N	3	3 ft	S	
1125	d	194	1.2	N	4	4 ft	S	
					5			
1130	d	1107	2.4	N	6	6 ft	S	spsm brown / light brown
					7			
1205 EN 1145	d	934	0.7	N	8	8 ft	S	spsm brown / light brown
					9			
1210 EN 1150	d	>112	1.0	N	10	10 ft	S	spsm brown / light brown
					11			
					12			



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Compliance · Engineering · Remediation

Identifier:

PH 26

Date:

10/25/19

Project Name:

6116 W 116w

RP Number:

2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By:

Method: Pothole

Hole Diameter:

28F

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
m	1,020	3.0	N	-	0			
m	1,301	4.6	N	-	1	1ft	S	trace root, spsm brown
m	523	2.8	N	-	2	2ft	S	spsm, trace roots brown
d	>112	4.5	N	-	3	3ft	S	spsm, trace roots brown
d	>112	2.5	N	-	4	4ft	S	spsm trace roots brown
d	2.1		N	-	5			
d			N	-	6	6ft	S	spsm, trace clay/trace roots brown
d			N	-	7			
d			N	-	8	8ft	S	spsm, tan color, trace clay
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH 27		Date: 10/25/19		
				Project Name: Eikwalew		RP Number: BRP-24967		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By:		Method: Probe		
Lat/Long:		Field Screening:		Hole Diameter: 2 in		Total Depth:		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
m	>112	1.0	N		1	18t		trace roots, spsc, brown
d	>112	1.4	N		2	28t		trace roots, spsc, brown
d	858	1.3	N		3	38t		trace roots, sandy loam, red/brown
d	858	1.7	N	-	4	48t		sp sm, brown
					5			
d	523	0.8	N		6	68t		sp sm, brown/tan
d	324	0.7	N	-	7	78t		chce, trace poorly graded brown sand white tan
					8			
					9			
					10			
					11			
					12			



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Compliance · Engineering · Remediation

Identifier:

PH 28

Date:

10/25/19

Project Name:

Elk Wallow

RP Number:

ERP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By:

Method:

Hole Diameter:

2'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
m	212	1.4	N		1	18t	S	spSC, brown
d	415	1.1	N		2	28t	S	spSC, brown
d	415	2.0	N	-	3	38t	S	spSC, brown
d	523	2.0	N		4	48t	S	spsm trace clay, light brown
					5			
d	523	1.2	N		6	68t	S	spsm
					7			
d	286	0.3	N	-	8	88t		spsm w/trace calc
					9			
					10			
					11			
					12			



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Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH 29

Date:

10/25/19

Project Name:

Blk Wall/W

RP Number:

2RP-24967

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By:

Method: Pothole

Hole Diameter:

2'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
d	>112	0.1	N		1	18t	S	spsc, trace silt
d	>112	0.2	N		2	28t	S	spsc,
d	>112	0.2	N		3	38t	S	spsc,
d	>112	0.0	N		4	48t	S	spsc, brown
					5			
d	<112	2.4	N	-	6	68t	S	spsc, brown
					7			
d	<112	2.0	N	-	8	88t	S	spsm, light brown to brown trace cace
					9			
					10			
					11			
					12			



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508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH30

Date:

10/25/14

Project Name:

Elk Wallow
State Battery

RP Number:

2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By:

Method: Petrohe

Hole Diameter:
2.8"

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
d	>112	1.0	N		1	18t	s	spsc, dark brown
d	>112	1.7 +5 EN	N		2	28t	s	spsc, brown
d	>112	0.6	N		3	38t	s	spsc, brown
d	>112	1.1	N		4	48t	s	spsc, brown
					5			
d	>112	1.8	N	-	6	68t	s	spsc, brown
					7			
d	>112	1.0	N	-	8	88t	s	spsc, brown, trace silt
					9			
					10			
					11			
					12			



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508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH81

Date:

10/28/19

Project Name:

Elk Wallow II
State Health Battery

RP Number:

2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Robert M.

Method: Pothole

Lat/Long:

Field Screening:

Hole Diameter:

2'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
0920	D	<112	0.4	N		1'	S	SP-SM Brown
0925	D	220	0.3	N		2'	S	SP-SM Brown
0930	D	220	0.8	N	-	3'	S	SP-SC Brown
0935	D	<112	0.5	N		4'	S	SP-SC Brown
					5			
0940	D	<112	0.4	N		6'	S	
					7			
0945	D	<112	0.3	N	-	8'	S	
					9			
					10			
					11			
					12			



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Identifier:

PH32

Date:

10/28/19

Project Name:

Elk Wallow II
State Battery

RP Number:

2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Robert M.

Method: Pothole

Lat/Long:

Field Screening:

Hole Diameter:

2'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1010 D	<112	0.1	N		1	1'	S	SP-SM Brown
1015 D	<112	0.1	N		2	2'	S	SP-SM
1020 M	<112	0.2	N	-	3	3.5'	S	SP-SC
1025 M	<112	0.1	N		4	4.5'	S	SP-SC
					5			
1030 M	<112	0.1	N		6	6'	S	SP-SC
					7			
1035 M	<112	0.1	N	-	8	8'	S	SP-SC
					9			
					10			
					11			
					12			



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 Identifier: **PH33**

 Date: **10/28/19**

 Project Name:
**Eik Wallow II
 State Battery**

 RP Number:
2RP-4967
LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

 Logged By: **Robert M.**

 Method: **Pothole**

 Hole Diameter: **2'**

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1110	D	<112	0.1	N	1	1'	S	SP-SM Brown
1115	D	<112	0.1	N	2	2.5'	S	SP-SM Brown
1120	M	<112	0.1	N	3	3'	S	SP-SC Brown
1125	M	<112	0.3	N	4	4'	S	
					5			
1130	M	<112	0.1	N	6	6'	S	
					7			
1135	M	<112	0.2	N	8	8'	S	
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH34 Date: 10/28/19						
Project Name: Eik Wallow II State Battery		RP Number: 2RP-4967						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M. Method: Pothole						
Lat/Long:		Field Screening:						
Hole Diameter: 2'		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1200	D	<112	0.2	N		1'	S	SP-SM Brown
1205	D	<112	0.4	N		2'	S	SP-SM Brown
1210	M	<112	0.3	N	-	3'	S	SP-SC Brown
1215	M	<112	0.1	N		4'	S	↓
					5			
1220	M	<112	0.2	N		6'	S	SP-SM Brown
					7			
1230	D	<112	0.2	N	-	8'	S	↓
					9			
					10			
					11			
					12			



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Compliance · Engineering · Remediation

Identifier: PH35

Date: 10/28/19

Project Name:
EIK Wallow II
State #001V Battery

RP Number:
2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: Robert M.

Method: Pothole

Hole Diameter: 2'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<112	1.2	N	1	0			
					1	1'	S	SP-SM Brown
D	<112	0.8	N		2	2'	S	SP-SC Brown
M	<112	0.9	N		3	3'	S	
M	<112	0.4	N		4	4'	S	
					5			
D	<112	0.4	N		6	6'	S	SP-SM Brown tan
					7			
D	<112	0.5	N	1	8	8'	S	CHCE tan white
					9			
					10			
					11			
					12			



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Compliance · Engineering · Remediation

Identifier:

PH36

Date:

10/28/19

Project Name:

EIK Wallow II
State Battery

RP Number:

2RP-4967

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Robert M.

Method: Pothole

Lat/Long:

Field Screening:

Hole Diameter:

2'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	<112	0.2	N		1	1'	S	SP-SM Brown
D	<112	0.6	N	-	2	2'	S	SP-SC
M	<112	0.3	N		3	3'	S	SP-SC
14	<112	0.2	N		4	4'	S	SP-SM tan
					5			
D	<112	0.1	N		6	6'	S	~~SP-SM~~ SP-SM tan
					7			
D	<112	0.1	N	-	8	8'	S	CHCE trace sand white tan
					9			
					10			
					11			
					12			



LT Environmental, Inc.
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 Identifier: **BH01**

 Date: **10/15/19**

 Project Name: **Remuda 100 Battery**

 RP Number:
2RP-5589
LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

 Logged By: **Robert M**

 Method: **Hand Auger**

 Hole Diameter: **3"**

 Total Depth: **2.5'**

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
						0			
1125	D	480	1.1	N		1	1'	S	SP-SM light Brown
						2	2'	S	SP-SM light Brown
1130	D	200	1.7	N		2.5'		S	SP-SM light Brown trace grey
1135	D	580	1.3	N		3			~~SP-SC Brown/Red~~ Gypsum
						4			
						5			
						6			Hand Auger Refusal
						7			
						8			
						9			
						10			
						11			
						12			



LT Environmental, Inc.
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Identifier: **BH02**

Date: **10/15/19**

Project Name:
Remuda 100 Battery

RP Number:
2RP-5589

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: **Robert M**

Method: **Hand Auger**

Hole Diameter: **3"**

Total Depth: **5'**

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
						0			
1205	M	2124	453	Y		1	1'	S	SP-sm Brown trace Calcite
1210	M	200	119	Y		2	2'	S	SP-sc Brown / Red
1215	M	2124	218	Y		3	3'	S	
1220	M	200	42.2	N		4	4'	S	
1225	M	2124	40.0	N		5	5'	S	
						6			
						7			
						8			
						9			
						10			
						11			
						12			



LT Environmental, Inc.
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Identifier:

BH03

Date:

10/15/19

Project Name:

Remuda 100 Battery

RP Number:

2RP-5589

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By:

Robert M.

Method: Hand Auger

Hole Diameter:

3"

Total Depth:

4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1140	M	<128	1.9	N	1	1'	S	SP-SC Brown
1145	M	<128	1.7	N	2	2'	S	
1150	M	<128	1.2	N	3	3'	S	
1155	M	<128	1.4	N	4	4'	S	
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

RM

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH04 Date: 10/15/19						
Project Name: Remuda 100 Battery RP Number: 2RP-5589		Method: Hand Auger						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert N Hole Diameter: 3" Total Depth: 4'						
Lat/Long: _____ Field Screening: _____		Comments: _____						
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1250	M	<128	0.7	N	1	1'	S	SP-SC Brown
1255	M	<128	1.4	N	2	2'	S	SP-SC Brown
1300	M	<128	2.2	N	3	3'	S	SP-SC Brown/Red
1305	M	<128	2.0	N	4	4'	S	SC Brown/Red nonplastic
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

RM



LT Environmental, Inc.
 508 West Stevens Street
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Identifier: BH05

Date: 10/15/19

Project Name: Remuda 100 Battery

RP Number: 2RP-5589

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Robert M.

Method: Hand Auger

Lat/Long:

Field Screening:

Hole Diameter: 3"

Total Depth: 4'

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
						0			
1310	M	<128	0.8	N		1	1'	S	SP-SC Brown
1315	M	<128	1.0	N		2	2'	S	
1320	M	<128	0.5	N		3	3'	S	
1325	M	380	0.4	N		4	4'	S	SP-SC Brown/Red
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			



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Identifier: **BH06**

Date: **10/15/19**

Project Name:
Remuda 100 Battery

RP Number:
2RP-5589

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: **Robert M.**

Method: **Hand Auger**

Hole Diameter: **3"**

Total Depth: **4'**

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1330	M	<124	1.3	N	1	1'	S	SP-SC Brown
1335	M	<124	0.9	N	2	2'	S	
1340	M	<124	0.9	N	3	3'	S	
1345	M	<124	1.0	N	4	4'	S	SP-SC Brown/Red
					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: **10/16/19**

Project Name: **Remuda 100 Battery**

RP Number: **2RP-5589**

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: **Robert M.**

Method: **Hand Auger**

Hole Diameter: **3"**

Total Depth: **4'**

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
						0			
0930	M	200	1.8	N		1	1'	S	SP-SC Brown Red
0935	M	200	2.5	N		2	2'	S	SP-SC Brown Red
0940	M	200	2.1	N		3	3'	S	SC Brown Red Poor Grade not plastic
0945	M	200	2.1	N		4	4'	S	SC Brown Red Poor Grade non Plastic
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

RM



LT Environmental, Inc.
 508 West Stevens Street
 Carlsbad, New Mexico 88220
 Compliance · Engineering · Remediation

Identifier: BH08

Date: 10/16/19

Project Name:
Remuda 100 BatteryRP Number:
2RP-5589**LITHOLOGIC / SOIL SAMPLING LOG**

Lat/Long:

Field Screening:

Logged By: Robert M.

Method: Hand Auger

Hole Diameter:
3"

Total Depth: 4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1000 M	2128	0.9	N		1	1'	S	SP-sm Brown
1005 M	2128	2.1	N		2	2'	S	
1010 M	2128	1.8	N		3	3'	S	
1015 M	2128	1.5	N		4	4'	S	SP-sc Brown slight red hue
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

BM



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

Compliance · Engineering · Remediation

Identifier:

BH09

Date:

10/16/19

Project Name:

Remuda 100 Battery

RP Number:

2RP-5589

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: Robert M.

Method: Hand Auger

Hole Diameter:

3"

Total Depth:

4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1320	M	124	0.7	N	1	1'	S	SP-SM Brown
1325	M	200	1.8	N	2	2'	S	SP-SM Brown Red
1330	M	380	2.3	N	3	3'	S	SP-SC Brown Red
1335	M	380	2.4	N	4	4'	S	SP-SC Brown Red
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

RM

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH10		Date: 10/16/19		
				Project Name: Remuda 100 Battery		RP Number: 2RP-5589		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: Robert M.		Method: Hard Auger		
Lat/Long:		Field Screening:		Hole Diameter: 3"		Total Depth: 4'		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1335	M	930	1.8	N	1	1'	S	SP-SM Brown / Red
1340	M	580	2.5	N	2	2'	S	SP-SM
1345	M	200	4.0	N	3	3'	S	SP-SM
1350	M	480	3.9	N	4	4'	S	SP-SC
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

BM

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



Analytical Report 600477

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow

28-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), 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 (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
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)
Xenco-Lakeland: Florida (E84098)



28-SEP-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **600477**

Elk Wallow

Project Address: NM Eddy 2RP-4967

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) 600477. 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. 600477 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 600477****LT Environmental, Inc., Arvada, CO**

Elk Wallow

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	09-25-18 18:00	6 In	600477-001
SS02	S	09-25-18 18:05	6 In	600477-002
SS03	S	09-25-18 18:10	6 In	600477-003
SS04	S	09-25-18 18:15	6 In	600477-004
SS05	S	09-25-18 18:25	6 In	600477-005
SS06	S	09-25-18 18:30	6 In	600477-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow

Project ID:

Work Order Number(s): 600477

Report Date: 28-SEP-18

Date Received: 09/27/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3064696 BTEX by EPA 8021B

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



Certificate of Analysis Summary 600477

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow



Project Id:

Contact: Adrian Baker

Project Location: NM Eddy 2RP-4967

Date Received in Lab: Thu Sep-27-18 10:34 am

Report Date: 28-SEP-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	600477-001	600477-002	600477-003	600477-004	600477-005	600477-006
	<i>Field Id:</i>	SS01	SS02	SS03	SS04	SS05	SS06
	<i>Depth:</i>	6- In	6- In	6- In	6- In	6- In	6- In
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-25-18 18:00	Sep-25-18 18:05	Sep-25-18 18:10	Sep-25-18 18:15	Sep-25-18 18:25	Sep-25-18 18:30
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-27-18 11:45	Sep-27-18 11:45	Sep-27-18 11:45	Sep-27-18 11:45	Sep-27-18 11:45	Sep-27-18 11:45
	<i>Analyzed:</i>	Sep-27-18 18:11	Sep-27-18 18:32	Sep-27-18 18:54	Sep-27-18 19:59	Sep-27-18 20:20	Sep-27-18 20:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00404 0.00404	<0.00398 0.00398	<0.00401 0.00401	<0.00402 0.00402	<0.00404 0.00404	<0.00399 0.00399
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Inorganic Anions by EPA 300	<i>Extracted:</i>	Sep-27-18 14:00	Sep-27-18 16:30	Sep-27-18 16:30	Sep-27-18 16:30	Sep-27-18 16:30	Sep-27-18 16:30
	<i>Analyzed:</i>	Sep-27-18 17:24	Sep-28-18 09:52	Sep-28-18 09:58	Sep-28-18 10:03	Sep-28-18 10:09	Sep-28-18 10:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1130 5.00	666 5.00	5510 49.5	1510 24.9	2500 24.8	1830 24.8
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-27-18 17:00	Sep-27-18 17:00	Sep-27-18 17:00	Sep-27-18 12:00	Sep-27-18 12:00	Sep-27-18 12:00
	<i>Analyzed:</i>	Sep-28-18 01:55	Sep-28-18 02:14	Sep-28-18 02:33	Sep-27-18 17:08	Sep-27-18 17:27	Sep-27-18 17:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<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)		744 15.0	714 15.0	452 15.0	815 15.0	1180 15.0	50.6 15.0
Motor Oil Range Hydrocarbons (MRO)		17.2 15.0	25.9 15.0	<15.0 15.0	53.4 15.0	53.9 15.0	<15.0 15.0
Total TPH		761 15.0	740 15.0	452 15.0	868 15.0	1230 15.0	50.6 15.0

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 600477



LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS01** Matrix: Soil Date Received: 09.27.18 10.34
 Lab Sample Id: 600477-001 Date Collected: 09.25.18 18.00 Sample Depth: 6 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: CHE Date Prep: 09.27.18 14.00 Basis: Wet Weight
 Seq Number: 3064711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1130	5.00	mg/kg	09.27.18 17.24		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.27.18 17.00 Basis: Wet Weight
 Seq Number: 3064742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.28.18 01.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	744	15.0	mg/kg	09.28.18 01.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	17.2	15.0	mg/kg	09.28.18 01.55		1
Total TPH	PHC635	761	15.0	mg/kg	09.28.18 01.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	09.28.18 01.55	
o-Terphenyl	84-15-1	115	%	70-135	09.28.18 01.55	



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS01**
 Lab Sample Id: 600477-001

Matrix: Soil
 Date Collected: 09.25.18 18.00

Date Received: 09.27.18 10.34
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.27.18 11.45

Basis: Wet Weight

Seq Number: 3064696

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.27.18 18.11	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.27.18 18.11		
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.27.18 18.11		



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS02** Matrix: Soil Date Received: 09.27.18 10.34
 Lab Sample Id: 600477-002 Date Collected: 09.25.18 18.05 Sample Depth: 6 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: CHE Date Prep: 09.27.18 16.30 Basis: Wet Weight
 Seq Number: 3064713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	666	5.00	mg/kg	09.28.18 09.52		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.27.18 17.00 Basis: Wet Weight
 Seq Number: 3064742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.28.18 02.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	714	15.0	mg/kg	09.28.18 02.14		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	25.9	15.0	mg/kg	09.28.18 02.14		1
Total TPH	PHC635	740	15.0	mg/kg	09.28.18 02.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	09.28.18 02.14	
o-Terphenyl	84-15-1	110	%	70-135	09.28.18 02.14	



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: SS02
Lab Sample Id: 600477-002

Matrix: Soil
Date Collected: 09.25.18 18.05

Date Received: 09.27.18 10.34
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064696

Date Prep: 09.27.18 11.45

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	09.27.18 18.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.27.18 18.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	09.27.18 18.32		
1,4-Difluorobenzene	540-36-3	112	%	70-130	09.27.18 18.32		



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS03**
 Lab Sample Id: 600477-003

Matrix: Soil
 Date Collected: 09.25.18 18.10

Date Received: 09.27.18 10.34
 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064713

Date Prep: 09.27.18 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5510	49.5	mg/kg	09.28.18 09.58		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064742

Date Prep: 09.27.18 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	09.28.18 02.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	452	15.0	mg/kg	09.28.18 02.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.28.18 02.33	U	1
Total TPH	PHC635	452	15.0	mg/kg	09.28.18 02.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.28.18 02.33	
o-Terphenyl	84-15-1	106	%	70-135	09.28.18 02.33	



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS03**
 Lab Sample Id: 600477-003

Matrix: Soil
 Date Collected: 09.25.18 18.10

Date Received: 09.27.18 10.34
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064696

Date Prep: 09.27.18 11.45

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	09.27.18 18.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.27.18 18.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	09.27.18 18.54		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.27.18 18.54		



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS04**
 Lab Sample Id: 600477-004

Matrix: Soil
 Date Collected: 09.25.18 18.15

Date Received: 09.27.18 10.34
 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064713

Date Prep: 09.27.18 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1510	24.9	mg/kg	09.28.18 10.03		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064741

Date Prep: 09.27.18 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.27.18 17.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	815	15.0	mg/kg	09.27.18 17.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	53.4	15.0	mg/kg	09.27.18 17.08		1
Total TPH	PHC635	868	15.0	mg/kg	09.27.18 17.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	09.27.18 17.08	
o-Terphenyl	84-15-1	114	%	70-135	09.27.18 17.08	



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS04**
 Lab Sample Id: 600477-004

Matrix: Soil
 Date Collected: 09.25.18 18.15

Date Received: 09.27.18 10.34
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.27.18 11.45

Basis: Wet Weight

Seq Number: 3064696

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.27.18 19.59	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	70-130	09.27.18 19.59		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.27.18 19.59		



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS05** Matrix: Soil Date Received: 09.27.18 10.34
 Lab Sample Id: 600477-005 Date Collected: 09.25.18 18.25 Sample Depth: 6 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: CHE Date Prep: 09.27.18 16.30 Basis: Wet Weight
 Seq Number: 3064713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2500	24.8	mg/kg	09.28.18 10.09		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.27.18 12.00 Basis: Wet Weight
 Seq Number: 3064741

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.27.18 17.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	1180	15.0	mg/kg	09.27.18 17.27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	53.9	15.0	mg/kg	09.27.18 17.27		1
Total TPH	PHC635	1230	15.0	mg/kg	09.27.18 17.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.27.18 17.27	
o-Terphenyl	84-15-1	127	%	70-135	09.27.18 17.27	



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: SS05
Lab Sample Id: 600477-005

Matrix: Soil
Date Collected: 09.25.18 18.25

Date Received: 09.27.18 10.34
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064696

Date Prep: 09.27.18 11.45

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	09.27.18 20.20	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.27.18 20.20	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.27.18 20.20		
4-Bromofluorobenzene	460-00-4	88	%	70-130	09.27.18 20.20		



Certificate of Analytical Results 600477



LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS06** Matrix: Soil Date Received: 09.27.18 10.34
 Lab Sample Id: 600477-006 Date Collected: 09.25.18 18.30 Sample Depth: 6 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: CHE Date Prep: 09.27.18 16.30 Basis: Wet Weight
 Seq Number: 3064713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1830	24.8	mg/kg	09.28.18 10.26		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.27.18 12.00 Basis: Wet Weight
 Seq Number: 3064741

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.27.18 17.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	50.6	15.0	mg/kg	09.27.18 17.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.27.18 17.45	U	1
Total TPH	PHC635	50.6	15.0	mg/kg	09.27.18 17.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.27.18 17.45	
o-Terphenyl	84-15-1	97	%	70-135	09.27.18 17.45	



Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id: **SS06**
 Lab Sample Id: 600477-006

Matrix: Soil
 Date Collected: 09.25.18 18.30

Date Received: 09.27.18 10.34
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.27.18 11.45

Basis: Wet Weight

Seq Number: 3064696

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.27.18 20.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.27.18 20.41		
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.27.18 20.41		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064711

MB Sample Id: 7663113-1-BLK

Matrix: Solid

LCS Sample Id: 7663113-1-BKS

Prep Method: E300P

Date Prep: 09.27.18

LCSD Sample Id: 7663113-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	247	99	246	98	90-110	0	20	mg/kg	09.27.18 14:24	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064711

MB Sample Id: 7663129-1-BLK

Matrix: Solid

LCS Sample Id: 7663129-1-BKS

Prep Method: E300P

Date Prep: 09.27.18

LCSD Sample Id: 7663129-1-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	255	102	256	102	90-110	0	20	mg/kg	09.28.18 09:24	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064711

Parent Sample Id: 600280-001

Matrix: Soil

MS Sample Id: 600280-001 S

Prep Method: E300P

Date Prep: 09.27.18

MSD Sample Id: 600280-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1150	252	1370	87	1370	87	90-110	0	20	mg/kg	09.27.18 14:41	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064711

Parent Sample Id: 600476-001

Matrix: Soil

MS Sample Id: 600476-001 S

Prep Method: E300P

Date Prep: 09.27.18

MSD Sample Id: 600476-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	836	250	1060	90	1070	94	90-110	1	20	mg/kg	09.27.18 16:11	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064713

Parent Sample Id: 600460-001

Matrix: Soil

MS Sample Id: 600460-001 S

Prep Method: E300P

Date Prep: 09.27.18

MSD Sample Id: 600460-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	262	106	261	105	90-110	0	20	mg/kg	09.28.18 09:41	

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

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

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

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



LT Environmental, Inc.

Elk Wallow

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064713

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 600490-001

MS Sample Id: 600490-001 S

Date Prep: 09.27.18

MSD Sample Id: 600490-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	455	253	704	98	704	98	90-110	0	20	mg/kg	09.28.18 11:00	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064741

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 7663152-1-BLK

LCS Sample Id: 7663152-1-BKS

Date Prep: 09.27.18

LCSD Sample Id: 7663152-1-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	952	95	961	96	70-135	1	20	mg/kg	09.27.18 09:57	
Diesel Range Organics (DRO)	<8.13	1000	980	98	999	100	70-135	2	20	mg/kg	09.27.18 09:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		119		122		70-135	%	09.27.18 09:57
o-Terphenyl	109		109		116		70-135	%	09.27.18 09:57

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064742

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 7663153-1-BLK

LCS Sample Id: 7663153-1-BKS

Date Prep: 09.27.18

LCSD Sample Id: 7663153-1-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	972	97	958	96	70-135	1	20	mg/kg	09.27.18 18:41	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	983	98	70-135	3	20	mg/kg	09.27.18 18:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		125		118		70-135	%	09.27.18 18:41
o-Terphenyl	111		110		103		70-135	%	09.27.18 18:41

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064741

Matrix: Soil

Prep Method: TX1005P

Parent Sample Id: 600275-001

MS Sample Id: 600275-001 S

Date Prep: 09.27.18

MSD Sample Id: 600275-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	8.37	1000	922	91	946	94	70-135	3	20	mg/kg	09.27.18 10:54	
Diesel Range Organics (DRO)	<8.13	1000	963	96	987	99	70-135	2	20	mg/kg	09.27.18 10:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		129		70-135	%	09.27.18 10:54
o-Terphenyl	108		104		70-135	%	09.27.18 10:54

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

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

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

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



LT Environmental, Inc.

Elk Wallow

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064742

Parent Sample Id: 600476-001

Matrix: Soil

MS Sample Id: 600476-001 S

Prep Method: TX1005P

Date Prep: 09.27.18

MSD Sample Id: 600476-001 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)	9.34	999	1000	99	982	97	70-135	2	20	mg/kg	09.28.18 11:52	
Diesel Range Organics (DRO)	<8.12	999	1030	103	1020	102	70-135	1	20	mg/kg	09.28.18 11:52	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		120		70-135	%	09.28.18 11:52
o-Terphenyl	110		111		70-135	%	09.28.18 11:52

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064696

MB Sample Id: 7663148-1-BLK

Matrix: Solid

LCS Sample Id: 7663148-1-BKS

Prep Method: SW5030B

Date Prep: 09.27.18

LCSD Sample Id: 7663148-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0776	78	0.0717	71	70-130	8	35	mg/kg	09.27.18 13:00	
Toluene	<0.00200	0.100	0.0757	76	0.0705	70	70-130	7	35	mg/kg	09.27.18 13:00	
Ethylbenzene	<0.00200	0.100	0.0847	85	0.0807	80	70-130	5	35	mg/kg	09.27.18 13:00	
m,p-Xylenes	<0.00401	0.200	0.168	84	0.161	80	70-130	4	35	mg/kg	09.27.18 13:00	
o-Xylene	<0.00200	0.100	0.0871	87	0.0828	82	70-130	5	35	mg/kg	09.27.18 13:00	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		74		90		70-130	%	09.27.18 13:00
4-Bromofluorobenzene	104		130		129		70-130	%	09.27.18 13:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064696

Parent Sample Id: 600476-001

Matrix: Soil

MS Sample Id: 600476-001 S

Prep Method: SW5030B

Date Prep: 09.27.18

MSD Sample Id: 600476-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0209	21	0.0274	27	70-130	27	35	mg/kg	09.27.18 13:44	X
Toluene	<0.00200	0.100	0.0189	19	0.0255	25	70-130	30	35	mg/kg	09.27.18 13:44	X
Ethylbenzene	<0.00200	0.100	0.0193	19	0.0273	27	70-130	34	35	mg/kg	09.27.18 13:44	X
m,p-Xylenes	<0.00401	0.200	0.0356	18	0.0520	26	70-130	37	35	mg/kg	09.27.18 13:44	XF
o-Xylene	<0.00200	0.100	0.0191	19	0.0265	26	70-130	32	35	mg/kg	09.27.18 13:44	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		103		70-130	%	09.27.18 13:44
4-Bromofluorobenzene	116		99		70-130	%	09.27.18 13:44

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

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



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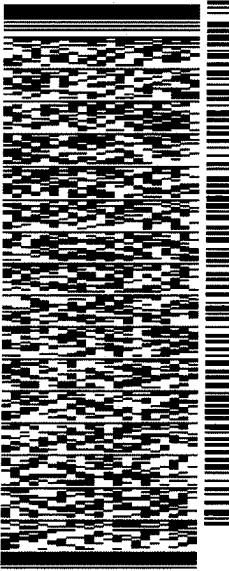
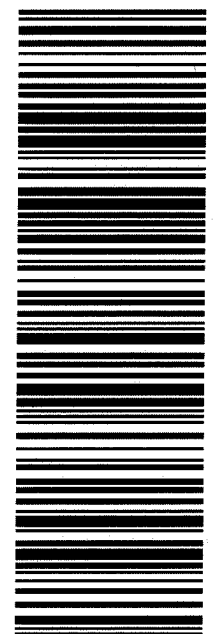
Xenco Quote #

Xenco Job #

600477

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: Elk Wallow											
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705				Project Location: NM EDDY											
Email: Adrian Baker				Invoice To: ZXTD Energy - Kyle Little											
Project Contact: Adrian Baker				PO Number:											
Sample's Name Lynda Landbach															
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	SS01	6"	08/25	18:00	S	1									
2	SS02	6"		18:05	S	1									
3	SS03	6"		18:10	S	1									
4	SS04	6"		18:15	S	1									
5	SS05	6"		18:25	S	1									
6	SS06	6"		18:30	S	1									
7															
8															
9															
10															
Turnaround Time (Business days)				Data Deliverable Information										Notes:	
☒ Same Day TAT		☐ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg / raw data)									
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV									
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG 411									
☐ 3 Day EMERGENCY				☐ TRRP Checklist											
TAT Starts Day received by Lab, if received by 5:00 pm															
Relinquished by Sampler:				SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY											
1. Relinquished by: [Signature]				Date Time: 08/25/08 6:41				Received By: [Signature]							
3. Relinquished by: [Signature]				Date Time: 9/24/15 15:30				Received By: [Signature]							
5. Relinquished by: [Signature]				Date Time: [Blank]				Received By: [Blank]							
Custody Seal #				Preserved where applicable											
On Ice				Cooler Temp.				The Comp Factor							
X				0.3				100							
FED-EX / UPS: Tracking #				783344000690											

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ORIGIN ID:CAOA (5/5) 887-6245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD NM 88220 UNITED STATES US	SHIP DATE: 26SEP18 ACTWGT: 40.00 LB CAD: 101813706INET4040 DIMS: 18x12x15 IN BILL RECIPIENT
TO HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711 (806) 794-1296 NV REF:	
DEPT:	
 	
TRK# 7733 3400 9590 0201	THU - 27 SEP HOLD STANDARD OVERNIGHT HLD MAFA TX-US LBB
	

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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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



Inter-Office Shipment

Page 1 of 1

IOS Number **114672**

Date/Time: 09/27/18 11:00

Created by: Brianna Teel

Please send report to: Jessica Kramer

Lab# From: **Midland**

Delivery Priority:

Address: 1211 W. Florida Ave, Midland TX 79701

Lab# To: **Lubbock**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
600477-001	S	SS01	09/25/18 18:00	SW8021B	BTEX by EPA 8021B	09/28/18	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-002	S	SS02	09/25/18 18:05	SW8021B	BTEX by EPA 8021B	09/28/18	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-003	S	SS03	09/25/18 18:10	SW8021B	BTEX by EPA 8021B	09/28/18	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-004	S	SS04	09/25/18 18:15	SW8021B	BTEX by EPA 8021B	09/28/18	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-005	S	SS05	09/25/18 18:25	SW8021B	BTEX by EPA 8021B	09/28/18	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-006	S	SS06	09/25/18 18:30	SW8021B	BTEX by EPA 8021B	09/28/18	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Brianna Teel

Received By: _____

Date Relinquished: 09/27/2018

Date Received: _____

Cooler Temperature: _____



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/27/2018 10:34:00 AM

Work Order #: 600477

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 09/27/2018

Checklist reviewed by:

Jessica Kramer

Date: 09/28/2018

Analytical Report 600989

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State #1

03-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), 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 (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
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)
Xenco-Lakeland: Florida (E84098)



03-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **600989**

Elk Wallow 11 State #1

Project Address: Eddy County 2RP4967

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) 600989. 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. 600989 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 600989****LT Environmental, Inc., Arvada, CO**

Elk Wallow 11 State #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH03	S	09-28-18 13:08	6 In	600989-001
PH03	S	09-28-18 13:10	1.0 ft	600989-002
PH04	S	09-28-18 12:57	6 In	600989-003
PH04	S	09-28-18 12:58	1.5 ft	600989-004
PH05	S	09-28-18 13:15	6 In	600989-005
PH05	S	09-28-18 13:17	1.0 ft	600989-006
PH06	S	09-28-18 13:20	6 In	600989-007
PH06	S	09-28-18 13:22	1.5 ft	600989-008

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Elk Wallow 11 State #1**

Project ID:
Work Order Number(s): 600989

Report Date: 03-OCT-18
Date Received: 10/02/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3065147 BTEX by EPA 8021B

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

Lab Sample ID 600989-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 600989-001, -002, -003, -004, -005, -006, -007, -008.

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



Certificate of Analysis Summary 600989

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1



Project Id:

Contact: Adrian Baker

Project Location: Eddy County 2RP4967

Date Received in Lab: Tue Oct-02-18 10:17 am

Report Date: 03-OCT-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	600989-001	600989-002	600989-003	600989-004	600989-005	600989-006
	<i>Field Id:</i>	PH03	PH03	PH04	PH04	PH05	PH05
	<i>Depth:</i>	6- In	1.0- ft	6- In	1.5- ft	6- In	1.0- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-28-18 13:08	Sep-28-18 13:10	Sep-28-18 12:57	Sep-28-18 12:58	Sep-28-18 13:15	Sep-28-18 13:17
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-02-18 15:00	Oct-02-18 15:00	Oct-02-18 15:00	Oct-02-18 15:00	Oct-02-18 15:00	Oct-02-18 15:00
	<i>Analyzed:</i>	Oct-02-18 20:33	Oct-02-18 20:54	Oct-02-18 21:15	Oct-02-18 21:36	Oct-02-18 21:56	Oct-02-18 22:18
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202
m,p-Xylenes		<0.00400 0.00400	<0.00404 0.00404	<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398	<0.00403 0.00403
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-02-18 15:00	Oct-02-18 15:00	Oct-02-18 15:00	Oct-02-18 15:00	Oct-02-18 15:00	Oct-02-18 15:00
	<i>Analyzed:</i>	Oct-02-18 21:31	Oct-02-18 21:37	Oct-02-18 21:43	Oct-02-18 22:00	Oct-02-18 22:05	Oct-02-18 22:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		318 4.95	192 4.96	358 5.00	<5.00 5.00	157 4.95	144 4.99
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-02-18 17:00	Oct-02-18 17:00	Oct-02-18 17:00	Oct-02-18 17:00	Oct-02-18 17:00	Oct-02-18 17:00
	<i>Analyzed:</i>	Oct-03-18 03:40	Oct-03-18 03:59	Oct-03-18 04:17	Oct-03-18 04:36	Oct-03-18 04:54	Oct-03-18 05:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		34.4 15.0	<15.0 15.0	108 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		34.4 15.0	<15.0 15.0	108 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 600989

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1



Project Id:

Contact: Adrian Baker

Project Location: Eddy County 2RP4967

Date Received in Lab: Tue Oct-02-18 10:17 am

Report Date: 03-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	600989-007	600989-008				
	Field Id:	PH06	PH06				
	Depth:	6- In	1.5- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Sep-28-18 13:20	Sep-28-18 13:22				
BTEX by EPA 8021B	Extracted:	Oct-02-18 15:00	Oct-02-18 15:00				
	Analyzed:	Oct-02-18 22:39	Oct-02-18 23:00				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00200 0.00200	<0.00199 0.00199				
	Toluene	<0.00200 0.00200	<0.00199 0.00199				
	Ethylbenzene	<0.00200 0.00200	<0.00199 0.00199				
	m,p-Xylenes	<0.00401 0.00401	<0.00398 0.00398				
	o-Xylene	<0.00200 0.00200	<0.00199 0.00199				
	Total Xylenes	<0.00200 0.00200	<0.00199 0.00199				
	Total BTEX	<0.00200 0.00200	<0.00199 0.00199				
Inorganic Anions by EPA 300	Extracted:	Oct-02-18 15:00	Oct-02-18 15:00				
	Analyzed:	Oct-02-18 22:28	Oct-02-18 22:34				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	125 4.99	72.9 4.95				
TPH by SW8015 Mod	Extracted:	Oct-02-18 17:00	Oct-02-18 17:00				
	Analyzed:	Oct-03-18 05:32	Oct-03-18 05:50				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0				
	Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0	<15.0 15.0				
	Total TPH	<15.0 15.0	<15.0 15.0				

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 - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 600989



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH03** Matrix: Soil Date Received: 10.02.18 10.17
 Lab Sample Id: 600989-001 Date Collected: 09.28.18 13.08 Sample Depth: 6 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: SCM Date Prep: 10.02.18 15.00 Basis: Wet Weight
 Seq Number: 3065130

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	318	4.95	mg/kg	10.02.18 21.31		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.02.18 17.00 Basis: Wet Weight
 Seq Number: 3065182

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 03.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	34.4	15.0	mg/kg	10.03.18 03.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 03.40	U	1
Total TPH	PHC635	34.4	15.0	mg/kg	10.03.18 03.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.03.18 03.40	
o-Terphenyl	84-15-1	100	%	70-135	10.03.18 03.40	



Certificate of Analytical Results 600989



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH03**
Lab Sample Id: 600989-001

Matrix: Soil
Date Collected: 09.28.18 13.08

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.02.18 15.00

Basis: Wet Weight

Seq Number: 3065147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.02.18 20.33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	10.02.18 20.33		
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.02.18 20.33		



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH03** Matrix: Soil Date Received: 10.02.18 10.17
 Lab Sample Id: 600989-002 Date Collected: 09.28.18 13.10 Sample Depth: 1.0 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: SCM Date Prep: 10.02.18 15.00 Basis: Wet Weight
 Seq Number: 3065130

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	192	4.96	mg/kg	10.02.18 21.37		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.02.18 17.00 Basis: Wet Weight
 Seq Number: 3065182

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 03.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 03.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 03.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 03.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.03.18 03.59	
o-Terphenyl	84-15-1	97	%	70-135	10.03.18 03.59	



Certificate of Analytical Results 600989



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH03**
Lab Sample Id: 600989-002

Matrix: Soil
Date Collected: 09.28.18 13.10

Date Received: 10.02.18 10.17
Sample Depth: 1.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065147

Date Prep: 10.02.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.02.18 20.54	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.02.18 20.54		
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.02.18 20.54		



Certificate of Analytical Results 600989



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH04**
Lab Sample Id: 600989-003

Matrix: Soil
Date Collected: 09.28.18 12.57

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065130

Date Prep: 10.02.18 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	358	5.00	mg/kg	10.02.18 21.43		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065182

Date Prep: 10.02.18 17.00

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	10.03.18 04.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	108	14.9	mg/kg	10.03.18 04.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.03.18 04.17	U	1
Total TPH	PHC635	108	14.9	mg/kg	10.03.18 04.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.03.18 04.17	
o-Terphenyl	84-15-1	104	%	70-135	10.03.18 04.17	



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH04**
 Lab Sample Id: 600989-003

Matrix: Soil
 Date Collected: 09.28.18 12.57

Date Received: 10.02.18 10.17
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065147

Date Prep: 10.02.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.02.18 21.15	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.02.18 21.15		
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.02.18 21.15		



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH04**
 Lab Sample Id: 600989-004

Matrix: Soil
 Date Collected: 09.28.18 12.58

Date Received: 10.02.18 10.17
 Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065130

Date Prep: 10.02.18 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	10.02.18 22.00	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065182

Date Prep: 10.02.18 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	10.03.18 04.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 04.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 04.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 04.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.03.18 04.36	
o-Terphenyl	84-15-1	94	%	70-135	10.03.18 04.36	



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH04**
 Lab Sample Id: 600989-004

Matrix: Soil
 Date Collected: 09.28.18 12.58

Date Received: 10.02.18 10.17
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065147

Date Prep: 10.02.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.02.18 21.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.02.18 21.36		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.02.18 21.36		



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH05**
 Lab Sample Id: 600989-005

Matrix: Soil
 Date Collected: 09.28.18 13.15

Date Received: 10.02.18 10.17
 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065130

Date Prep: 10.02.18 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	157	4.95	mg/kg	10.02.18 22.05		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065182

Date Prep: 10.02.18 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	10.03.18 04.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 04.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 04.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 04.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.03.18 04.54	
o-Terphenyl	84-15-1	93	%	70-135	10.03.18 04.54	



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH05**
 Lab Sample Id: 600989-005

Matrix: Soil
 Date Collected: 09.28.18 13.15

Date Received: 10.02.18 10.17
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065147

Date Prep: 10.02.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.02.18 21.56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.02.18 21.56		
1,4-Difluorobenzene	540-36-3	94	%	70-130	10.02.18 21.56		



Certificate of Analytical Results 600989



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH05**
Lab Sample Id: 600989-006

Matrix: Soil
Date Collected: 09.28.18 13.17

Date Received: 10.02.18 10.17
Sample Depth: 1.0 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065130

Date Prep: 10.02.18 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	144	4.99	mg/kg	10.02.18 22.22		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065182

Date Prep: 10.02.18 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	10.03.18 05.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 05.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 05.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 05.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.03.18 05.13	
o-Terphenyl	84-15-1	96	%	70-135	10.03.18 05.13	



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH05**
 Lab Sample Id: 600989-006

Matrix: Soil
 Date Collected: 09.28.18 13.17

Date Received: 10.02.18 10.17
 Sample Depth: 1.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065147

Date Prep: 10.02.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.02.18 22.18	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.02.18 22.18		
1,4-Difluorobenzene	540-36-3	89	%	70-130	10.02.18 22.18		



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH06** Matrix: Soil Date Received: 10.02.18 10.17
 Lab Sample Id: 600989-007 Date Collected: 09.28.18 13.20 Sample Depth: 6 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: SCM Date Prep: 10.02.18 15.00 Basis: Wet Weight
 Seq Number: 3065130

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	125	4.99	mg/kg	10.02.18 22.28		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.02.18 17.00 Basis: Wet Weight
 Seq Number: 3065182

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 05.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 05.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 05.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 05.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.03.18 05.32	
o-Terphenyl	84-15-1	96	%	70-135	10.03.18 05.32	



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH06**
 Lab Sample Id: 600989-007

Matrix: Soil
 Date Collected: 09.28.18 13.20

Date Received: 10.02.18 10.17
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.02.18 15.00

Basis: Wet Weight

Seq Number: 3065147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.02.18 22.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.02.18 22.39		
1,4-Difluorobenzene	540-36-3	92	%	70-130	10.02.18 22.39		



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH06**
 Lab Sample Id: 600989-008

Matrix: Soil
 Date Collected: 09.28.18 13.22

Date Received: 10.02.18 10.17
 Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065130

Date Prep: 10.02.18 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.9	4.95	mg/kg	10.02.18 22.34		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065182

Date Prep: 10.02.18 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	10.03.18 05.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 05.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 05.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 05.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.03.18 05.50	
o-Terphenyl	84-15-1	93	%	70-135	10.03.18 05.50	



Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **PH06**
 Lab Sample Id: 600989-008

Matrix: Soil
 Date Collected: 09.28.18 13.22

Date Received: 10.02.18 10.17
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065147

Date Prep: 10.02.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.02.18 23.00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	85	%	70-130	10.02.18 23.00		
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.02.18 23.00		



Flagging Criteria



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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State #1

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065130

MB Sample Id: 7663394-1-BLK

Matrix: Solid

LCS Sample Id: 7663394-1-BKS

Prep Method: E300P

Date Prep: 10.02.18

LCSD Sample Id: 7663394-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	264	106	264	106	90-110	0	20	mg/kg	10.02.18 20:12	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065130

Parent Sample Id: 600977-001

Matrix: Soil

MS Sample Id: 600977-001 S

Prep Method: E300P

Date Prep: 10.02.18

MSD Sample Id: 600977-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	52.5	248	314	105	315	106	90-110	0	20	mg/kg	10.02.18 20:29	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065130

Parent Sample Id: 600989-003

Matrix: Soil

MS Sample Id: 600989-003 S

Prep Method: E300P

Date Prep: 10.02.18

MSD Sample Id: 600989-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	358	250	603	98	603	98	90-110	0	20	mg/kg	10.02.18 21:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065182

MB Sample Id: 7663405-1-BLK

Matrix: Solid

LCS Sample Id: 7663405-1-BKS

Prep Method: TX1005P

Date Prep: 10.02.18

LCSD Sample Id: 7663405-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	989	99	1000	100	70-135	1	20	mg/kg	10.03.18 02:07	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	1020	102	70-135	0	20	mg/kg	10.03.18 02:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		111		115		70-135	%	10.03.18 02:07
o-Terphenyl	106		110		107		70-135	%	10.03.18 02:07

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065182

Parent Sample Id: 600977-001

Matrix: Soil

MS Sample Id: 600977-001 S

Prep Method: TX1005P

Date Prep: 10.02.18

MSD Sample Id: 600977-001 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)	9.15	999	960	95	1070	106	70-135	11	20	mg/kg	10.03.18 03:03	
Diesel Range Organics (DRO)	108	999	1100	99	1250	115	70-135	13	20	mg/kg	10.03.18 03:03	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		129		70-135	%	10.03.18 03:03
o-Terphenyl	107		123		70-135	%	10.03.18 03:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065147

MB Sample Id: 7663421-1-BLK

Matrix: Solid

LCS Sample Id: 7663421-1-BKS

Prep Method: SW5030B

Date Prep: 10.02.18

LCSD Sample Id: 7663421-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0806	80	0.0858	85	70-130	6	35	mg/kg	10.02.18 18:24	
Toluene	<0.00202	0.101	0.0762	75	0.0825	82	70-130	8	35	mg/kg	10.02.18 18:24	
Ethylbenzene	<0.00202	0.101	0.0860	85	0.0947	94	70-130	10	35	mg/kg	10.02.18 18:24	
m,p-Xylenes	<0.00102	0.202	0.167	83	0.189	94	70-130	12	35	mg/kg	10.02.18 18:24	
o-Xylene	<0.00202	0.101	0.0856	85	0.0948	94	70-130	10	35	mg/kg	10.02.18 18:24	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		106		100		70-130	%	10.02.18 18:24
4-Bromofluorobenzene	90		102		105		70-130	%	10.02.18 18:24

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065147

Parent Sample Id: 600989-001

Matrix: Soil

MS Sample Id: 600989-001 S

Prep Method: SW5030B

Date Prep: 10.02.18

MSD Sample Id: 600989-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0724	72	0.0845	85	70-130	15	35	mg/kg	10.02.18 19:07	
Toluene	<0.00200	0.100	0.0660	66	0.0758	76	70-130	14	35	mg/kg	10.02.18 19:07	X
Ethylbenzene	<0.00200	0.100	0.0676	68	0.0785	79	70-130	15	35	mg/kg	10.02.18 19:07	X
m,p-Xylenes	<0.00401	0.200	0.131	66	0.154	77	70-130	16	35	mg/kg	10.02.18 19:07	X
o-Xylene	<0.00200	0.100	0.0672	67	0.0791	79	70-130	16	35	mg/kg	10.02.18 19:07	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		101		70-130	%	10.02.18 19:07
4-Bromofluorobenzene	106		100		70-130	%	10.02.18 19:07

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



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Midland, Texas (432-704-5251)

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Phoenix, Arizona (480-355-0900)

CHAIN OF C STUDY

Page 1 Of 1

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes
Company Name / Branch: <u>L.T. Environmental, Inc.</u>		Project Name/Number: <u>Elk Mallow II State #1</u>				W = Water S = Soil/Sediment GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Waste WM = Waste Water A = Air
Company Address: <u>3300 N.W. St. Building Unit 103 Midway, TX 75270</u>		Project Location: <u>Eddy County ARPA907</u>				
Email: <u>ababer@leav.com</u> Phone No: <u>(432) 704-5178</u>		Invoice To: <u>XTO Energy - Kyle Littrell</u>				
Project Contact: <u>Adrian Baker</u>		PO Number: <u>ARPA907</u>				
Sampler's Name: <u>Adrian Baker</u>						

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO ₃	H ₂ SO ₄	NaOH	NaHSO ₄	MEOH	NONE	TPH by SW 8015 Mod	BTEX by EPA 8021B	Chloride by EPA 800	Field Comments
1	PH03	6"	09/18	13:08	S	1												
2	PH03	1.0ft		13:10	S	1												
3	PH04	6"		12:57	S	1												
4	PH04	1.5ft		12:58	S	1												
5	PH05	6"		13:15	S	1												
6	PH05	1.0ft		13:14	S	1												
7	PH06	6"		13:20	S	1												
8	PH06	1.5ft		13:22	S	1												
9																		
10																		

Turnaround Time (Business days) _____ Data Deliverable Information _____ Notes: _____

☒ Same Day TAT ☐ 5 Day TAT ☐ Next Day EMERGENCY ☐ 7 Day TAT ☐ 2 Day EMERGENCY ☐ Contract TAT ☐ 3 Day EMERGENCY ☐ TRRP Checklist		☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data) ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐ Level 3 (CLP Forms) ☐ UST / RG -411	

TAT Starts Day received by Lab, if received by 5:00 pm		FED-EX / UPS Tracking # <u>773210944 2007</u>	
Relinquished by Sample: <u>Adrian Baker</u>		Date Time: <u>10/1/18</u> Received By: <u>[Signature]</u>	
Relinquished by: <u>Adrian Baker</u>		Date Time: <u>10/1/18</u> Relinquished By: <u>[Signature]</u>	
Relinquished by:		Custody Seal # _____ Preserved where applicable _____	

Notice: 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 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

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 CARLSBAD, NM 88220
 UNITED STATES US

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 ACTWGT: 37.00 LB
 CAD: 101813706INET4040
 DIMS: 26x14x14 IN
 BILL RECIPIENT

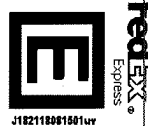
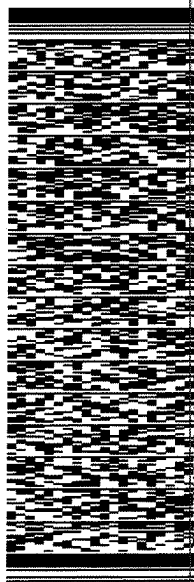
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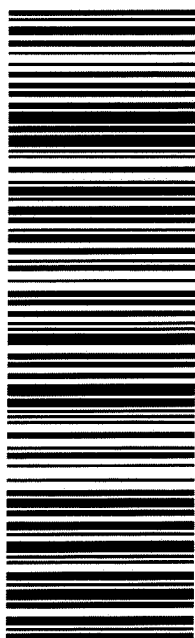
J18211888150114

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 STANDARD OVERNIGHT

41 MAFA

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Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/02/2018 10:17:00 AM

Work Order #: 600989

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

Date: 10/02/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/02/2018

Analytical Report 601536

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State 1H

10-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), 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 (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

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)

Xenco-Lakeland: Florida (E84098)



10-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **601536**

Elk Wallow 11 State 1H

Project Address: Carlsbad NM

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) 601536. 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. 601536 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

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**Sample Cross Reference 601536****LT Environmental, Inc., Arvada, CO**

Elk Wallow 11 State 1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH07A	S	10-03-18 10:35	3 ft	601536-001
PH07B	S	10-03-18 10:55	5 ft	601536-002
PH08A	S	10-03-18 12:00	4 ft	601536-003
PH08B	S	10-03-18 12:10	5 ft	601536-004
PH09A	S	10-03-18 13:15	3 ft	601536-005
PH09B	S	10-03-18 13:55	5 ft	601536-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow 11 State 1H

Project ID:

Work Order Number(s): 601536

Report Date: 10-OCT-18

Date Received: 10/05/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3065825 BTEX by EPA 8021B

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

Lab Sample ID 601306-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

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

Samples in the analytical batch are: 601306-001.

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



Certificate of Analysis Summary 601536

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State 1H



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad NM

Date Received in Lab: Fri Oct-05-18 10:50 am

Report Date: 10-OCT-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	601536-001	601536-002	601536-003	601536-004	601536-005	601536-006
	<i>Field Id:</i>	PH07A	PH07B	PH08A	PH08B	PH09A	PH09B
	<i>Depth:</i>	3- ft	5- ft	4- ft	5- ft	3- ft	5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-03-18 10:35	Oct-03-18 10:55	Oct-03-18 12:00	Oct-03-18 12:10	Oct-03-18 13:15	Oct-03-18 13:55
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-09-18 08:00	Oct-09-18 08:00	Oct-09-18 08:00	Oct-09-18 08:00	Oct-09-18 08:00	Oct-09-18 08:00
	<i>Analyzed:</i>	Oct-09-18 18:18	Oct-09-18 17:56	Oct-09-18 17:35	Oct-09-18 17:13	Oct-09-18 16:52	Oct-09-18 16:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00402 0.00402	<0.00404 0.00404	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401	<0.00402 0.00402
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-09-18 08:30	Oct-09-18 08:30	Oct-09-18 08:30	Oct-09-18 08:30	Oct-09-18 08:30	Oct-09-18 08:30
	<i>Analyzed:</i>	Oct-09-18 11:51	Oct-09-18 11:56	Oct-09-18 12:02	Oct-09-18 12:08	Oct-09-18 12:13	Oct-09-18 12:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2090 25.1	17.3 4.99	906 24.9	3700 25.0	4960 50.0	3930 25.0
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-08-18 08:00	Oct-08-18 08:00	Oct-08-18 08:00	Oct-08-18 08:00	Oct-08-18 08:00	Oct-08-18 08:00
	<i>Analyzed:</i>	Oct-08-18 14:46	Oct-08-18 15:05	Oct-08-18 15:23	Oct-08-18 16:19	Oct-08-18 16:38	Oct-08-18 16:56
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		43.2 15.0	32.6 15.0	<15.0 15.0	53.9 15.0	64.9 14.9	27.1 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	17.4 14.9	<15.0 15.0
Total TPH		43.2 15.0	32.6 15.0	<15.0 15.0	53.9 15.0	82.3 14.9	27.1 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 - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH07A** Matrix: Soil Date Received: 10.05.18 10.50
 Lab Sample Id: 601536-001 Date Collected: 10.03.18 10.35 Sample Depth: 3 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.09.18 08.30 Basis: Wet Weight
 Seq Number: 3065831

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2090	25.1	mg/kg	10.09.18 11.51		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.08.18 08.00 Basis: Wet Weight
 Seq Number: 3065804

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.08.18 14.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	43.2	15.0	mg/kg	10.08.18 14.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.08.18 14.46	U	1
Total TPH	PHC635	43.2	15.0	mg/kg	10.08.18 14.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.08.18 14.46	
o-Terphenyl	84-15-1	96	%	70-135	10.08.18 14.46	



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH07A**
 Lab Sample Id: 601536-001

Matrix: Soil
 Date Collected: 10.03.18 10.35

Date Received: 10.05.18 10.50
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 08.00

Basis: Wet Weight

Seq Number: 3065825

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.09.18 18.18	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.09.18 18.18	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.09.18 18.18	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.09.18 18.18	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.09.18 18.18	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.09.18 18.18	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.09.18 18.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	10.09.18 18.18		
1,4-Difluorobenzene	540-36-3	112	%	70-130	10.09.18 18.18		



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH07B** Matrix: Soil Date Received: 10.05.18 10.50
 Lab Sample Id: 601536-002 Date Collected: 10.03.18 10.55 Sample Depth: 5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.09.18 08.30 Basis: Wet Weight
 Seq Number: 3065831

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.3	4.99	mg/kg	10.09.18 11.56		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.08.18 08.00 Basis: Wet Weight
 Seq Number: 3065804

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.08.18 15.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	32.6	15.0	mg/kg	10.08.18 15.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.08.18 15.05	U	1
Total TPH	PHC635	32.6	15.0	mg/kg	10.08.18 15.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.08.18 15.05	
o-Terphenyl	84-15-1	96	%	70-135	10.08.18 15.05	



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH07B**
 Lab Sample Id: 601536-002

Matrix: Soil
 Date Collected: 10.03.18 10.55

Date Received: 10.05.18 10.50
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065825

Date Prep: 10.09.18 08.00

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	10.09.18 17.56	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.09.18 17.56	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.09.18 17.56	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.09.18 17.56	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.09.18 17.56	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.09.18 17.56	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.09.18 17.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.09.18 17.56		
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.09.18 17.56		



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH08A** Matrix: Soil Date Received: 10.05.18 10.50
 Lab Sample Id: 601536-003 Date Collected: 10.03.18 12.00 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.09.18 08.30 Basis: Wet Weight
 Seq Number: 3065831

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	906	24.9	mg/kg	10.09.18 12.02		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.08.18 08.00 Basis: Wet Weight
 Seq Number: 3065804

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.08.18 15.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.08.18 15.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.08.18 15.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.08.18 15.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.08.18 15.23	
o-Terphenyl	84-15-1	96	%	70-135	10.08.18 15.23	



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH08A**
 Lab Sample Id: 601536-003

Matrix: Soil
 Date Collected: 10.03.18 12.00

Date Received: 10.05.18 10.50
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065825

Date Prep: 10.09.18 08.00

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	10.09.18 17.35	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.09.18 17.35	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.09.18 17.35	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.09.18 17.35	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.09.18 17.35	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.09.18 17.35	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.09.18 17.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.09.18 17.35		
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.09.18 17.35		



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH08B**
 Lab Sample Id: 601536-004

Matrix: Soil
 Date Collected: 10.03.18 12.10

Date Received: 10.05.18 10.50
 Sample Depth: 5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3065831

Date Prep: 10.09.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3700	25.0	mg/kg	10.09.18 12.08		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065804

Date Prep: 10.08.18 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	10.08.18 16.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	53.9	15.0	mg/kg	10.08.18 16.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.08.18 16.19	U	1
Total TPH	PHC635	53.9	15.0	mg/kg	10.08.18 16.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.08.18 16.19	
o-Terphenyl	84-15-1	96	%	70-135	10.08.18 16.19	



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH08B**
 Lab Sample Id: 601536-004

Matrix: Soil
 Date Collected: 10.03.18 12.10

Date Received: 10.05.18 10.50
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065825

Date Prep: 10.09.18 08.00

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	10.09.18 17.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.09.18 17.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.09.18 17.13	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.09.18 17.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.09.18 17.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.09.18 17.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.09.18 17.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	10.09.18 17.13		
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.09.18 17.13		



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH09A** Matrix: Soil Date Received: 10.05.18 10.50
 Lab Sample Id: 601536-005 Date Collected: 10.03.18 13.15 Sample Depth: 3 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.09.18 08.30 Basis: Wet Weight
 Seq Number: 3065831

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4960	50.0	mg/kg	10.09.18 12.13		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.08.18 08.00 Basis: Wet Weight
 Seq Number: 3065804

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.08.18 16.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	64.9	14.9	mg/kg	10.08.18 16.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	17.4	14.9	mg/kg	10.08.18 16.38		1
Total TPH	PHC635	82.3	14.9	mg/kg	10.08.18 16.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	10.08.18 16.38	
o-Terphenyl	84-15-1	109	%	70-135	10.08.18 16.38	



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH09A**
 Lab Sample Id: 601536-005

Matrix: Soil
 Date Collected: 10.03.18 13.15

Date Received: 10.05.18 10.50
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065825

Date Prep: 10.09.18 08.00

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	10.09.18 16.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.09.18 16.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.09.18 16.52	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.09.18 16.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.09.18 16.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.09.18 16.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.09.18 16.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	10.09.18 16.52		
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.09.18 16.52		



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH09B** Matrix: Soil Date Received: 10.05.18 10.50
 Lab Sample Id: 601536-006 Date Collected: 10.03.18 13.55 Sample Depth: 5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.09.18 08.30 Basis: Wet Weight
 Seq Number: 3065831

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3930	25.0	mg/kg	10.09.18 12.19		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.08.18 08.00 Basis: Wet Weight
 Seq Number: 3065804

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.08.18 16.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	27.1	15.0	mg/kg	10.08.18 16.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.08.18 16.56	U	1
Total TPH	PHC635	27.1	15.0	mg/kg	10.08.18 16.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.08.18 16.56	
o-Terphenyl	84-15-1	93	%	70-135	10.08.18 16.56	



Certificate of Analytical Results 601536

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **PH09B**
 Lab Sample Id: 601536-006

Matrix: Soil
 Date Collected: 10.03.18 13.55

Date Received: 10.05.18 10.50
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 08.00

Basis: Wet Weight

Seq Number: 3065825

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.09.18 16.30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.09.18 16.30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.09.18 16.30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.09.18 16.30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.09.18 16.30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.09.18 16.30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.09.18 16.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	10.09.18 16.30		
1,4-Difluorobenzene	540-36-3	112	%	70-130	10.09.18 16.30		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065831

MB Sample Id: 7663777-1-BLK

Matrix: Solid

LCS Sample Id: 7663777-1-BKS

Prep Method: E300P

Date Prep: 10.09.18

LCSD Sample Id: 7663777-1-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	245	98	245	98	90-110	0	20	mg/kg	10.09.18 09:34	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065831

Parent Sample Id: 601292-042

Matrix: Soil

MS Sample Id: 601292-042 S

Prep Method: E300P

Date Prep: 10.09.18

MSD Sample Id: 601292-042 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	247	99	248	99	90-110	0	20	mg/kg	10.09.18 09:52	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065831

Parent Sample Id: 601334-003

Matrix: Soil

MS Sample Id: 601334-003 S

Prep Method: E300P

Date Prep: 10.09.18

MSD Sample Id: 601334-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.67	250	254	101	254	101	90-110	0	20	mg/kg	10.09.18 11:11	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065804

MB Sample Id: 7663747-1-BLK

Matrix: Solid

LCS Sample Id: 7663747-1-BKS

Prep Method: TX1005P

Date Prep: 10.08.18

LCSD Sample Id: 7663747-1-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	936	94	948	95	70-135	1	20	mg/kg	10.08.18 11:22	
Diesel Range Organics (DRO)	<8.13	1000	983	98	966	97	70-135	2	20	mg/kg	10.08.18 11:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		97		128		70-135	%	10.08.18 11:22
o-Terphenyl	97		101		104		70-135	%	10.08.18 11:22

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065804

Parent Sample Id: 601524-021

Matrix: Soil

MS Sample Id: 601524-021 S

Prep Method: TX1005P

Date Prep: 10.08.18

MSD Sample Id: 601524-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.98	997	903	91	915	92	70-135	1	20	mg/kg	10.08.18 12:17	
Diesel Range Organics (DRO)	<8.10	997	947	95	957	96	70-135	1	20	mg/kg	10.08.18 12:17	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		126		70-135	%	10.08.18 12:17
o-Terphenyl	96		96		70-135	%	10.08.18 12:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065825

MB Sample Id: 7663819-1-BLK

Matrix: Solid

LCS Sample Id: 7663819-1-BKS

Prep Method: SW5030B

Date Prep: 10.09.18

LCSD Sample Id: 7663819-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.111	111	0.103	103	70-130	7	35	mg/kg	10.09.18 08:09	
Toluene	<0.00201	0.100	0.0974	97	0.0908	91	70-130	7	35	mg/kg	10.09.18 08:09	
Ethylbenzene	<0.00201	0.100	0.115	115	0.106	106	70-130	8	35	mg/kg	10.09.18 08:09	
m,p-Xylenes	<0.00402	0.201	0.230	114	0.210	105	70-130	9	35	mg/kg	10.09.18 08:09	
o-Xylene	<0.00201	0.100	0.116	116	0.106	106	70-130	9	35	mg/kg	10.09.18 08:09	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		112		119		70-130	%	10.09.18 08:09
4-Bromofluorobenzene	90		98		100		70-130	%	10.09.18 08:09

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065825

Parent Sample Id: 601306-001

Matrix: Soil

MS Sample Id: 601306-001 S

Prep Method: SW5030B

Date Prep: 10.09.18

MSD Sample Id: 601306-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0742	74	0.0874	88	70-130	16	35	mg/kg	10.09.18 08:51	
Toluene	<0.00199	0.0996	0.0682	68	0.0783	78	70-130	14	35	mg/kg	10.09.18 08:51	X
Ethylbenzene	<0.00199	0.0996	0.0775	78	0.0889	89	70-130	14	35	mg/kg	10.09.18 08:51	
m,p-Xylenes	<0.00398	0.199	0.141	71	0.165	83	70-130	16	35	mg/kg	10.09.18 08:51	
o-Xylene	<0.00199	0.0996	0.0766	77	0.0887	89	70-130	15	35	mg/kg	10.09.18 08:51	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		114		70-130	%	10.09.18 08:51
4-Bromofluorobenzene	111		114		70-130	%	10.09.18 08:51

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

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



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 Service Center - Hobbs, NM (575) 392-7550

CHAIN OF CUSTODY

Page 1 of 1

Revision 2016.1

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes				
Company Name / Branch: LTE				Project Name/Number: Elk Wallow 11 state 1H												
Company Address: Midland, TX 79705				Project Location: Carlsbad, NM												
3300 North "A" Street Bldg 1 Unit 103				Invoice To: XTO - Kyle Littrell												
Email: ABaker@LTEnv.com (432) 904-5178				Phone No: 												
Project Contact: Adrian Baker				PO Number: 												
Sampler's Name: Garrett Green																
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Field Comments	
1		PH07A	3'	10/3/18	10:35	5	1									
2		PH07B	5'	10/3/18	10:55	5	1									
3		PH08A	4'	10/3/18	12:00	5	1									
4		PH08B	5'	10/3/18	12:10	5	1									
5		PH09A	3'	10/3/18	13:15	5	1									
6		PH09B	5'	10/3/18	13:35	5	1									
7																
8																
9																
10																
Turnaround Time (Business days) 5 Day TAT																
Data Deliverable Information																
☐ Same Day TAT ☒ 5 Day TAT ☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data)																
☐ Next Day EMERGENCY ☐ 7 Day TAT ☐ Level III Std QC + Forms ☐ TRRP Level IV																
☐ 2 Day EMERGENCY ☐ Contract TAT ☐ Level 3 (CLP Forms) ☐ UST / RG-411																
☐ 3 Day EMERGENCY ☐ Level II Report with TRRP checklist																
TAT Starts Day received by Lab, if received by 5:00 pm																
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
1. <i>Garrett Green</i>		10/3/18 17:50		1. <i>Adrian Baker</i>		10/3/18 17:50		2. <i>Adrian Baker</i>		10/3/18 17:50		3. <i>Adrian Baker</i>		10/3/18 17:50		
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
3. <i>Adrian Baker</i>		10/3/18 17:50		3. <i>Adrian Baker</i>		10/3/18 17:50		4. <i>Adrian Baker</i>		10/3/18 17:50		5. <i>Adrian Baker</i>		10/3/18 17:50		
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. 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 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.																



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/05/2018 10:50:00 AM

Work Order #: 601536

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)?	4.1
#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)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 10/05/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/05/2018

Analytical Report 601913

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State#1 H

012918147

17-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), 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 (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

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)

Xenco-Lakeland: Florida (E84098)



17-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **601913**

Elk Wallow 11 State#1 H

Project Address: Eddy County 2RP4967

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) 601913. 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. 601913 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 601913****LT Environmental, Inc., Arvada, CO**

Elk Wallow 11 State#1 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	10-03-18 10:00	8 ft	601913-001
FS02	S	10-03-18 14:09	2.5 ft	601913-002
FS03	S	10-03-18 14:07	2.5 ft	601913-003
FS04	S	10-03-18 15:45	3.5 ft	601913-004
FS05	S	10-03-18 16:05	4 ft	601913-005
FS06	S	10-04-18 11:15	7 ft	601913-006
FS07	S	10-04-18 13:45	8 ft	601913-007
SW01	S	10-04-18 12:15	2 ft	601913-008



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow 11 State#1 H

Project ID: 012918147
Work Order Number(s): 601913

Report Date: 17-OCT-18
Date Received: 10/10/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3066385 BTEX by EPA 8021B

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



Certificate of Analysis Summary 601913

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State#1 H



Project Id: 012918147
Contact: Adrian Baker
Project Location: Eddy County 2RP4967

Date Received in Lab: Wed Oct-10-18 10:45 am
Report Date: 17-OCT-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	601913-001	601913-002	601913-003	601913-004	601913-005	601913-006
	<i>Field Id:</i>	FS01	FS02	FS03	FS04	FS05	FS06
	<i>Depth:</i>	8- ft	2.5- ft	2.5- ft	3.5- ft	4- ft	7- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-03-18 10:00	Oct-03-18 14:09	Oct-03-18 14:07	Oct-03-18 15:45	Oct-03-18 16:05	Oct-04-18 11:15
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-15-18 08:00	Oct-15-18 08:00	Oct-15-18 08:00	Oct-15-18 08:00	Oct-15-18 08:00	Oct-15-18 08:00
	<i>Analyzed:</i>	Oct-15-18 15:30	Oct-15-18 15:59	Oct-15-18 16:21	Oct-15-18 16:41	Oct-15-18 17:03	Oct-15-18 17:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00402 0.00402	<0.00404 0.00404	<0.00401 0.00401	<0.00397 0.00397
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-15-18 08:30	Oct-15-18 09:15	Oct-15-18 09:15	Oct-15-18 09:15	Oct-15-18 09:15	Oct-15-18 09:15
	<i>Analyzed:</i>	Oct-15-18 15:28	Oct-15-18 16:19	Oct-15-18 16:25	Oct-15-18 16:30	Oct-15-18 16:36	Oct-15-18 16:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		277 4.98	66.0 5.03	266 4.95	291 4.95	107 4.97	187 5.03
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-12-18 17:00	Oct-12-18 17:00	Oct-12-18 17:00	Oct-12-18 17:00	Oct-12-18 17:00	Oct-12-18 17:00
	<i>Analyzed:</i>	Oct-14-18 08:30	Oct-13-18 21:43	Oct-13-18 22:01	Oct-13-18 22:20	Oct-13-18 22:39	Oct-13-18 22:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<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	39.0 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	39.0 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601913

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State#1 H



Project Id: 012918147
Contact: Adrian Baker
Project Location: Eddy County 2RP4967

Date Received in Lab: Wed Oct-10-18 10:45 am
Report Date: 17-OCT-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	601913-007	601913-008				
	Field Id:	FS07	SW01				
	Depth:	8- ft	2- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Oct-04-18 13:45	Oct-04-18 12:15				
BTEX by EPA 8021B	Extracted:	Oct-15-18 08:00	Oct-15-18 08:00				
	Analyzed:	Oct-15-18 17:45	Oct-15-18 18:07				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00198 0.00198	<0.00202 0.00202				
Toluene		<0.00198 0.00198	<0.00202 0.00202				
Ethylbenzene		<0.00198 0.00198	<0.00202 0.00202				
m,p-Xylenes		<0.00396 0.00396	<0.00403 0.00403				
o-Xylene		<0.00198 0.00198	<0.00202 0.00202				
Total Xylenes		<0.00198 0.00198	<0.00202 0.00202				
Total BTEX		<0.00198 0.00198	<0.00202 0.00202				
Inorganic Anions by EPA 300	Extracted:	Oct-15-18 09:15	Oct-15-18 09:15				
	Analyzed:	Oct-15-18 16:02	Oct-15-18 16:59				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		174 5.00	332 5.02				
TPH by SW8015 Mod	Extracted:	Oct-12-18 17:00	Oct-12-18 17:00				
	Analyzed:	Oct-13-18 23:16	Oct-13-18 23:35				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				

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 - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS01** Matrix: Soil Date Received: 10.10.18 10.45
 Lab Sample Id: 601913-001 Date Collected: 10.03.18 10.00 Sample Depth: 8 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.15.18 08.30 Basis: Wet Weight
 Seq Number: 3066404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	277	4.98	mg/kg	10.15.18 15.28		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.12.18 17.00 Basis: Wet Weight
 Seq Number: 3066398

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.14.18 08.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.14.18 08.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.14.18 08.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.14.18 08.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	10.14.18 08.30	
o-Terphenyl	84-15-1	106	%	70-135	10.14.18 08.30	



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS01**
 Lab Sample Id: 601913-001

Matrix: Soil
 Date Collected: 10.03.18 10.00

Date Received: 10.10.18 10.45
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.15.18 08.00

Basis: Wet Weight

Seq Number: 3066385

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.15.18 15.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.15.18 15.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.15.18 15.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.15.18 15.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.15.18 15.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.15.18 15.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.15.18 15.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.15.18 15.30		
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.15.18 15.30		



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS02**
 Lab Sample Id: 601913-002

Matrix: Soil
 Date Collected: 10.03.18 14.09

Date Received: 10.10.18 10.45
 Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3066429

Date Prep: 10.15.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	66.0	5.03	mg/kg	10.15.18 16.19		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3066398

Date Prep: 10.12.18 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	10.13.18 21.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.13.18 21.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.13.18 21.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.13.18 21.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.13.18 21.43	
o-Terphenyl	84-15-1	99	%	70-135	10.13.18 21.43	



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS02**
 Lab Sample Id: 601913-002

Matrix: Soil
 Date Collected: 10.03.18 14.09

Date Received: 10.10.18 10.45
 Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066385

Date Prep: 10.15.18 08.00

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	10.15.18 15.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.15.18 15.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.15.18 15.59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.15.18 15.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.15.18 15.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.15.18 15.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.15.18 15.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	10.15.18 15.59		
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.15.18 15.59		



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS03**
 Lab Sample Id: 601913-003

Matrix: Soil
 Date Collected: 10.03.18 14.07

Date Received: 10.10.18 10.45
 Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3066429

Date Prep: 10.15.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	266	4.95	mg/kg	10.15.18 16.25		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3066398

Date Prep: 10.12.18 17.00

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	10.13.18 22.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	39.0	14.9	mg/kg	10.13.18 22.01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.13.18 22.01	U	1
Total TPH	PHC635	39.0	14.9	mg/kg	10.13.18 22.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.13.18 22.01	
o-Terphenyl	84-15-1	98	%	70-135	10.13.18 22.01	



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS03**
 Lab Sample Id: 601913-003

Matrix: Soil
 Date Collected: 10.03.18 14.07

Date Received: 10.10.18 10.45
 Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066385

Date Prep: 10.15.18 08.00

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	10.15.18 16.21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.15.18 16.21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.15.18 16.21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.15.18 16.21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.15.18 16.21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.15.18 16.21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.15.18 16.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.15.18 16.21		
1,4-Difluorobenzene	540-36-3	89	%	70-130	10.15.18 16.21		



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS04**
 Lab Sample Id: 601913-004

Matrix: Soil
 Date Collected: 10.03.18 15.45

Date Received: 10.10.18 10.45
 Sample Depth: 3.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3066429

Date Prep: 10.15.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	291	4.95	mg/kg	10.15.18 16.30		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3066398

Date Prep: 10.12.18 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	10.13.18 22.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.13.18 22.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.13.18 22.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.13.18 22.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.13.18 22.20	
o-Terphenyl	84-15-1	94	%	70-135	10.13.18 22.20	



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS04**
 Lab Sample Id: 601913-004

Matrix: Soil
 Date Collected: 10.03.18 15.45

Date Received: 10.10.18 10.45
 Sample Depth: 3.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066385

Date Prep: 10.15.18 08.00

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	10.15.18 16.41	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.15.18 16.41	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.15.18 16.41	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.15.18 16.41	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.15.18 16.41	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.15.18 16.41	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.15.18 16.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.15.18 16.41		
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.15.18 16.41		



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS05**
 Lab Sample Id: 601913-005

Matrix: Soil
 Date Collected: 10.03.18 16.05

Date Received: 10.10.18 10.45
 Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3066429

Date Prep: 10.15.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	107	4.97	mg/kg	10.15.18 16.36		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3066398

Date Prep: 10.12.18 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	10.13.18 22.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.13.18 22.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.13.18 22.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.13.18 22.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.13.18 22.39	
o-Terphenyl	84-15-1	93	%	70-135	10.13.18 22.39	



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS05**
 Lab Sample Id: 601913-005

Matrix: Soil
 Date Collected: 10.03.18 16.05

Date Received: 10.10.18 10.45
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066385

Date Prep: 10.15.18 08.00

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	10.15.18 17.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.15.18 17.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.15.18 17.03	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.15.18 17.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.15.18 17.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.15.18 17.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.15.18 17.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	10.15.18 17.03		
4-Bromofluorobenzene	460-00-4	101	%	70-130	10.15.18 17.03		



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS06** Matrix: Soil Date Received: 10.10.18 10.45
 Lab Sample Id: 601913-006 Date Collected: 10.04.18 11.15 Sample Depth: 7 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.15.18 09.15 Basis: Wet Weight
 Seq Number: 3066429

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	187	5.03	mg/kg	10.15.18 16.53		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.12.18 17.00 Basis: Wet Weight
 Seq Number: 3066398

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.13.18 22.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.13.18 22.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.13.18 22.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.13.18 22.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.13.18 22.57	
o-Terphenyl	84-15-1	94	%	70-135	10.13.18 22.57	



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS06**
 Lab Sample Id: 601913-006

Matrix: Soil
 Date Collected: 10.04.18 11.15

Date Received: 10.10.18 10.45
 Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066385

Date Prep: 10.15.18 08.00

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	10.15.18 17.24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.15.18 17.24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.15.18 17.24	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.15.18 17.24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.15.18 17.24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.15.18 17.24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.15.18 17.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	10.15.18 17.24		
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.15.18 17.24		



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS07** Matrix: Soil Date Received: 10.10.18 10.45
 Lab Sample Id: 601913-007 Date Collected: 10.04.18 13.45 Sample Depth: 8 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.15.18 09.15 Basis: Wet Weight
 Seq Number: 3066429

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	174	5.00	mg/kg	10.15.18 16.02		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.12.18 17.00 Basis: Wet Weight
 Seq Number: 3066398

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.13.18 23.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.13.18 23.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.13.18 23.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.13.18 23.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	10.13.18 23.16	
o-Terphenyl	84-15-1	93	%	70-135	10.13.18 23.16	



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **FS07**
 Lab Sample Id: 601913-007

Matrix: Soil
 Date Collected: 10.04.18 13.45

Date Received: 10.10.18 10.45
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066385

Date Prep: 10.15.18 08.00

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	10.15.18 17.45	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.15.18 17.45	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.15.18 17.45	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.15.18 17.45	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.15.18 17.45	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.15.18 17.45	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.15.18 17.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.15.18 17.45		
1,4-Difluorobenzene	540-36-3	87	%	70-130	10.15.18 17.45		



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **SW01**
 Lab Sample Id: 601913-008

Matrix: Soil
 Date Collected: 10.04.18 12.15

Date Received: 10.10.18 10.45
 Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3066429

Date Prep: 10.15.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	332	5.02	mg/kg	10.15.18 16.59		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3066398

Date Prep: 10.12.18 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	10.13.18 23.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.13.18 23.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.13.18 23.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.13.18 23.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.13.18 23.35	
o-Terphenyl	84-15-1	93	%	70-135	10.13.18 23.35	



Certificate of Analytical Results 601913

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State#1 H

Sample Id: **SW01**
 Lab Sample Id: 601913-008

Matrix: Soil
 Date Collected: 10.04.18 12.15

Date Received: 10.10.18 10.45
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066385

Date Prep: 10.15.18 08.00

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	10.15.18 18.07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.15.18 18.07	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.15.18 18.07	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.15.18 18.07	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.15.18 18.07	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.15.18 18.07	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.15.18 18.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	90	%	70-130	10.15.18 18.07		
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.15.18 18.07		



Flagging Criteria



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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State#1 H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066404

MB Sample Id: 7664168-1-BLK

Matrix: Solid

LCS Sample Id: 7664168-1-BKS

Prep Method: E300P

Date Prep: 10.15.18

LCSD Sample Id: 7664168-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	250	100	258	103	90-110	3	20	mg/kg	10.15.18 12:43	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066429

MB Sample Id: 7664172-1-BLK

Matrix: Solid

LCS Sample Id: 7664172-1-BKS

Prep Method: E300P

Date Prep: 10.15.18

LCSD Sample Id: 7664172-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	252	101	250	100	90-110	1	20	mg/kg	10.15.18 15:51	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066404

Parent Sample Id: 601605-018

Matrix: Soil

MS Sample Id: 601605-018 S

Prep Method: E300P

Date Prep: 10.15.18

MSD Sample Id: 601605-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.855	249	244	98	251	101	90-110	3	20	mg/kg	10.15.18 13:00	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066404

Parent Sample Id: 601606-006

Matrix: Soil

MS Sample Id: 601606-006 S

Prep Method: E300P

Date Prep: 10.15.18

MSD Sample Id: 601606-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	553	248	796	98	777	90	90-110	2	20	mg/kg	10.15.18 14:20	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066429

Parent Sample Id: 601913-007

Matrix: Soil

MS Sample Id: 601913-007 S

Prep Method: E300P

Date Prep: 10.15.18

MSD Sample Id: 601913-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	174	250	429	102	434	104	90-110	1	20	mg/kg	10.15.18 16:08	

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State#1 H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066429

Parent Sample Id: 601914-005

Matrix: Soil

MS Sample Id: 601914-005 S

Prep Method: E300P

Date Prep: 10.15.18

MSD Sample Id: 601914-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	423	248	684	105	661	96	90-110	3	20	mg/kg	10.15.18 17:27	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066398

MB Sample Id: 7664105-1-BLK

Matrix: Solid

LCS Sample Id: 7664105-1-BKS

Prep Method: TX1005P

Date Prep: 10.12.18

LCSD Sample Id: 7664105-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1010	101	1060	106	70-135	5	20	mg/kg	10.13.18 19:33	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	1080	108	70-135	5	20	mg/kg	10.13.18 19:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		115		122		70-135	%	10.13.18 19:33
o-Terphenyl	95		106		104		70-135	%	10.13.18 19:33

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066398

Parent Sample Id: 601912-001

Matrix: Soil

MS Sample Id: 601912-001 S

Prep Method: TX1005P

Date Prep: 10.12.18

MSD Sample Id: 601912-001 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)	13.8	999	913	90	916	90	70-135	0	20	mg/kg	10.13.18 20:29	
Diesel Range Organics (DRO)	<8.12	999	927	93	928	93	70-135	0	20	mg/kg	10.13.18 20:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		109		70-135	%	10.13.18 20:29
o-Terphenyl	97		95		70-135	%	10.13.18 20:29

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State#1 H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066385

MB Sample Id: 7664177-1-BLK

Matrix: Solid

LCS Sample Id: 7664177-1-BKS

Prep Method: SW5030B

Date Prep: 10.15.18

LCSD Sample Id: 7664177-1-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	0.125	125	0.116	116	70-130	7	35	mg/kg	10.15.18 07:53	
Toluene	<0.00200	0.0998	0.108	108	0.103	103	70-130	5	35	mg/kg	10.15.18 07:53	
Ethylbenzene	<0.00200	0.0998	0.123	123	0.115	115	70-130	7	35	mg/kg	10.15.18 07:53	
m,p-Xylenes	<0.00399	0.200	0.231	116	0.236	117	70-130	2	35	mg/kg	10.15.18 07:53	
o-Xylene	<0.00200	0.0998	0.122	122	0.114	114	70-130	7	35	mg/kg	10.15.18 07:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		93		84		70-130	%	10.15.18 07:53
4-Bromofluorobenzene	101		109		94		70-130	%	10.15.18 07:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066385

Parent Sample Id: 601718-001

Matrix: Soil

MS Sample Id: 601718-001 S

Prep Method: SW5030B

Date Prep: 10.15.18

MSD Sample Id: 601718-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0931	93	0.101	100	70-130	8	35	mg/kg	10.15.18 08:35	
Toluene	<0.00200	0.100	0.0958	96	0.0912	90	70-130	5	35	mg/kg	10.15.18 08:35	
Ethylbenzene	<0.00200	0.100	0.112	112	0.102	101	70-130	9	35	mg/kg	10.15.18 08:35	
m,p-Xylenes	<0.00401	0.200	0.236	118	0.207	103	70-130	13	35	mg/kg	10.15.18 08:35	
o-Xylene	<0.00200	0.100	0.109	109	0.0995	99	70-130	9	35	mg/kg	10.15.18 08:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	120		81		70-130	%	10.15.18 08:35
4-Bromofluorobenzene	96		97		70-130	%	10.15.18 08:35

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

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

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

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



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

San Antonio, Texas (210-508-3334)
Midland, Texas (432-704-5251)

www.xerico.com

Phoenix, Arizona (480-355-0900)

CHAIN OF C STUDY

Page 1 of 1

Client / Reporting Information Company Name / Branch: <u>IT Fairview, Inc.</u> <u>Polina Office</u> Company Address: <u>3300 N.W. St. Building 1 Unit 103</u> <u>Milford, TX 75702</u> Email: <u>adrian.baker@fairview.com</u> <u>(432) 704-5178</u> Project Contact: <u>Adrian Baker</u> Samples Name: <u>Anna Byers</u>		Project Information <u>012918147</u> Project Name/Number: <u>Elk Hollow 11 State #1 H</u> Project Location: <u>Eddy County SRP4967</u> Invoice To: <u>XTO: Kyle Littrell</u> PO Number: <u>7RP4967</u>		Analytical Information Matrix Codes: <u>TPH by SW8015 Mod</u> <u>BTEX by EPA 8021 B</u> <u>Chloride by EPA 300</u>																																																																																																																						
Field ID / Point of Collection No. <u>1</u> <u>ESQ1</u> <u>2</u> <u>ESQ2</u> <u>3</u> <u>ESQ3</u> <u>4</u> <u>ESQ4</u> <u>5</u> <u>ESQ5</u> <u>6</u> <u>ESQ6</u> <u>7</u> <u>ESQ7</u> <u>8</u> <u>SWQ1</u> <u>9</u> <u>SWQ2</u> <u>10</u> <u>SWQ3</u>		Collection <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Depth</th> <th>Date</th> <th>Time</th> <th>Matrix</th> <th># of bottles</th> <th>CI</th> <th>NaOH/Zn Acetate</th> <th>HNO3</th> <th>H2SO4</th> <th>NaOH</th> <th>NaHSO4</th> <th>MEOH</th> <th>NONE</th> </tr> </thead> <tbody> <tr><td>8'</td><td>10/03</td><td>10:00</td><td>S</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2.5'</td><td>10/03</td><td>14:09</td><td>S</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2.5'</td><td>10/03</td><td>14:07</td><td>S</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3.5'</td><td>10/03</td><td>15:45</td><td>S</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4'</td><td>10/03</td><td>16:05</td><td>S</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7'</td><td>10/04</td><td>11:15</td><td>S</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8'</td><td>10/04</td><td>13:45</td><td>S</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2'</td><td>10/04</td><td>12:15</td><td>S</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>		Sample Depth	Date	Time	Matrix	# of bottles	CI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	8'	10/03	10:00	S	1									2.5'	10/03	14:09	S	1									2.5'	10/03	14:07	S	1									3.5'	10/03	15:45	S	1									4'	10/03	16:05	S	1									7'	10/04	11:15	S	1									8'	10/04	13:45	S	1									2'	10/04	12:15	S	1									Notes: <u>average depth</u> <u>deepest point depth</u>	
Sample Depth	Date	Time	Matrix	# of bottles	CI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE																																																																																																														
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Turnaround Time (Business days) ☐ Same Day TAT ☒ 5 Day TAT ☐ Next Day EMERGENCY ☐ 7 Day TAT ☐ 2 Day EMERGENCY ☐ Contract TAT ☐ 3 Day EMERGENCY		Data Deliverable Information ☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data) ☐ Next Day EMERGENCY ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐ 2 Day EMERGENCY ☐ Level 3 (CLP Forms) ☐ UST / RG -411 ☐ 3 Day EMERGENCY ☐ TRRP Checklist		FED-EX / UPS Tracking # <u>773424301590</u>																																																																																																																						
TAT Starts Day received by Lab, if received by 5:00 pm Relinquished by Sampler: <u>Anna Byers</u> Relinquished by: <u>Anna Byers</u> Relinquished by: <u>Anna Byers</u>		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Date Time</th> <th>Received By</th> <th>Date Time</th> <th>Relinquished By</th> <th>Date Time</th> <th>Received By</th> <th>Date Time</th> <th>Relinquished By</th> </tr> </thead> <tbody> <tr> <td>10/04/18</td> <td><u>Anna Byers</u></td> <td>10/05/18</td> <td><u>Anna Byers</u></td> <td>10/05/18</td> <td><u>Anna Byers</u></td> <td>10/05/18</td> <td><u>Anna Byers</u></td> </tr> <tr> <td>10/04/18</td> <td><u>Anna Byers</u></td> <td>10/05/18</td> <td><u>Anna Byers</u></td> <td>10/05/18</td> <td><u>Anna Byers</u></td> <td>10/05/18</td> <td><u>Anna Byers</u></td> </tr> <tr> <td>10/04/18</td> <td><u>Anna Byers</u></td> <td>10/05/18</td> <td><u>Anna Byers</u></td> <td>10/05/18</td> <td><u>Anna Byers</u></td> <td>10/05/18</td> <td><u>Anna Byers</u></td> </tr> </tbody> </table>		Date Time	Received By	Date Time	Relinquished By	Date Time	Received By	Date Time	Relinquished By	10/04/18	<u>Anna Byers</u>	10/05/18	<u>Anna Byers</u>	10/05/18	<u>Anna Byers</u>	10/05/18	<u>Anna Byers</u>	10/04/18	<u>Anna Byers</u>	10/05/18	<u>Anna Byers</u>	10/05/18	<u>Anna Byers</u>	10/05/18	<u>Anna Byers</u>	10/04/18	<u>Anna Byers</u>	10/05/18	<u>Anna Byers</u>	10/05/18	<u>Anna Byers</u>	10/05/18	<u>Anna Byers</u>	Field Comments W = Water S = Soil/Sed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water A = Air																																																																																						
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Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/10/2018 10:45:00 AM

Work Order #: 601913

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.1
#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)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 10/10/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/10/2018

Analytical Report 601966

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State 1H

17-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), 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 (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
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)
Xenco-Lakeland: Florida (E84098)



17-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **601966**

Elk Wallow 11 State 1H

Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 601966. 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. 601966 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

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**Sample Cross Reference 601966****LT Environmental, Inc., Arvada, CO**

Elk Wallow 11 State 1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS08	S	10-05-18 11:50	8 ft	601966-001
FS09	S	10-05-18 12:35	8 ft	601966-002
SW02	S	10-05-18 13:15	4 ft	601966-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow 11 State 1H

Project ID:

Work Order Number(s): 601966

Report Date: 17-OCT-18

Date Received: 10/10/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3066646 BTEX by EPA 8021B

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



Certificate of Analysis Summary 601966

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State 1H



Project Id:

Contact: Adrian Baker

Project Location: Delaware Basin

Date Received in Lab: Wed Oct-10-18 01:55 pm

Report Date: 17-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	601966-001	601966-002	601966-003			
	Field Id:	FS08	FS09	SW02			
	Depth:	8- ft	8- ft	4- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Oct-05-18 11:50	Oct-05-18 12:35	Oct-05-18 13:15			
BTEX by EPA 8021B	Extracted:	Oct-16-18 14:00	Oct-16-18 14:00	Oct-16-18 14:00			
	Analyzed:	Oct-16-18 19:52	Oct-16-18 20:13	Oct-16-18 20:34			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201			
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201			
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201			
m,p-Xylenes		<0.00399 0.00399	<0.00401 0.00401	<0.00402 0.00402			
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201			
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201			
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201			
Inorganic Anions by EPA 300	Extracted:	Oct-16-18 09:00	Oct-16-18 09:00	Oct-16-18 09:00			
	Analyzed:	Oct-16-18 14:11	Oct-16-18 14:34	Oct-16-18 14:51			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		28.0 4.98	204 5.00	12.5 4.99			
TPH by SW8015 Mod	Extracted:	Oct-15-18 16:00	Oct-15-18 16:00	Oct-15-18 16:00			
	Analyzed:	Oct-15-18 23:53	Oct-16-18 00:48	Oct-16-18 01:06			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	19.3 15.0	<15.0 15.0			
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		<15.0 15.0	19.3 15.0	<15.0 15.0			

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 601966

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS08** Matrix: Soil Date Received: 10.10.18 13.55
 Lab Sample Id: 601966-001 Date Collected: 10.05.18 11.50 Sample Depth: 8 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: CHE Date Prep: 10.16.18 09.00 Basis: Wet Weight
 Seq Number: 3066546

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.0	4.98	mg/kg	10.16.18 14.11		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.15.18 16.00 Basis: Wet Weight
 Seq Number: 3066670

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.15.18 23.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.15.18 23.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.15.18 23.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.15.18 23.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.15.18 23.53	
o-Terphenyl	84-15-1	93	%	70-135	10.15.18 23.53	



Certificate of Analytical Results 601966

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS08**
 Lab Sample Id: 601966-001

Matrix: Soil
 Date Collected: 10.05.18 11.50

Date Received: 10.10.18 13.55
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066646

Date Prep: 10.16.18 14.00

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	10.16.18 19.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.16.18 19.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.16.18 19.52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.16.18 19.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.16.18 19.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.16.18 19.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.16.18 19.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	10.16.18 19.52		
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.16.18 19.52		



Certificate of Analytical Results 601966

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS09** Matrix: Soil Date Received: 10.10.18 13.55
 Lab Sample Id: 601966-002 Date Collected: 10.05.18 12.35 Sample Depth: 8 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: CHE Date Prep: 10.16.18 09.00 Basis: Wet Weight
 Seq Number: 3066546

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	204	5.00	mg/kg	10.16.18 14.34		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.15.18 16.00 Basis: Wet Weight
 Seq Number: 3066670

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	19.3	15.0	mg/kg	10.16.18 00.48		1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.16.18 00.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.16.18 00.48	U	1
Total TPH	PHC635	19.3	15.0	mg/kg	10.16.18 00.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.16.18 00.48	
o-Terphenyl	84-15-1	95	%	70-135	10.16.18 00.48	



Certificate of Analytical Results 601966

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS09**
 Lab Sample Id: 601966-002

Matrix: Soil
 Date Collected: 10.05.18 12.35

Date Received: 10.10.18 13.55
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.16.18 14.00

Basis: Wet Weight

Seq Number: 3066646

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.16.18 20.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.16.18 20.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.16.18 20.13	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.16.18 20.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.16.18 20.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.16.18 20.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.16.18 20.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.16.18 20.13		
1,4-Difluorobenzene	540-36-3	109	%	70-130	10.16.18 20.13		



Certificate of Analytical Results 601966

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW02** Matrix: Soil Date Received: 10.10.18 13.55
 Lab Sample Id: 601966-003 Date Collected: 10.05.18 13.15 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: CHE Date Prep: 10.16.18 09.00 Basis: Wet Weight
 Seq Number: 3066546

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.5	4.99	mg/kg	10.16.18 14.51		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.15.18 16.00 Basis: Wet Weight
 Seq Number: 3066670

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.16.18 01.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.16.18 01.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.16.18 01.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.16.18 01.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.16.18 01.06	
o-Terphenyl	84-15-1	89	%	70-135	10.16.18 01.06	



Certificate of Analytical Results 601966

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW02**
 Lab Sample Id: 601966-003

Matrix: Soil
 Date Collected: 10.05.18 13.15

Date Received: 10.10.18 13.55
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066646

Date Prep: 10.16.18 14.00

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	10.16.18 20.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.16.18 20.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.16.18 20.34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.16.18 20.34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.16.18 20.34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.16.18 20.34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.16.18 20.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	115	%	70-130	10.16.18 20.34		
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.16.18 20.34		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066546

MB Sample Id: 7664185-1-BLK

Matrix: Solid

LCS Sample Id: 7664185-1-BKS

Prep Method: E300P

Date Prep: 10.16.18

LCSD Sample Id: 7664185-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	252	101	249	100	90-110	1	20	mg/kg	10.16.18 12:17	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066546

Parent Sample Id: 601964-003

Matrix: Soil

MS Sample Id: 601964-003 S

Prep Method: E300P

Date Prep: 10.16.18

MSD Sample Id: 601964-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	552	249	815	106	806	102	90-110	1	20	mg/kg	10.16.18 12:34	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066546

Parent Sample Id: 601966-001

Matrix: Soil

MS Sample Id: 601966-001 S

Prep Method: E300P

Date Prep: 10.16.18

MSD Sample Id: 601966-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.0	249	290	105	278	100	90-110	4	20	mg/kg	10.16.18 14:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066670

MB Sample Id: 7664243-1-BLK

Matrix: Solid

LCS Sample Id: 7664243-1-BKS

Prep Method: TX1005P

Date Prep: 10.15.18

LCSD Sample Id: 7664243-1-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	889	89	874	87	70-135	2	20	mg/kg	10.15.18 19:53	
Diesel Range Organics (DRO)	<8.13	1000	967	97	981	98	70-135	1	20	mg/kg	10.15.18 19:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		114		118		70-135	%	10.15.18 19:53
o-Terphenyl	102		90		116		70-135	%	10.15.18 19:53

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066670

Parent Sample Id: 601964-001

Matrix: Soil

MS Sample Id: 601964-001 S

Prep Method: TX1005P

Date Prep: 10.15.18

MSD Sample Id: 601964-001 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)	908	998	1620	71	1570	66	70-135	3	20	mg/kg	10.16.18 09:15	X
Diesel Range Organics (DRO)	13700	998	13100	0	12600	0	70-135	4	20	mg/kg	10.16.18 09:15	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		95		70-135	%	10.16.18 09:15
o-Terphenyl	90		101		70-135	%	10.16.18 09:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066646

MB Sample Id: 7664314-1-BLK

Matrix: Solid

LCS Sample Id: 7664314-1-BKS

Prep Method: SW5030B

Date Prep: 10.16.18

LCSD Sample Id: 7664314-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.108	107	0.109	109	70-130	1	35	mg/kg	10.16.18 17:03	
Toluene	<0.00202	0.101	0.0934	92	0.0938	94	70-130	0	35	mg/kg	10.16.18 17:03	
Ethylbenzene	<0.00202	0.101	0.107	106	0.108	108	70-130	1	35	mg/kg	10.16.18 17:03	
m,p-Xylenes	<0.00403	0.202	0.221	109	0.223	111	70-130	1	35	mg/kg	10.16.18 17:03	
o-Xylene	<0.00202	0.101	0.106	105	0.109	109	70-130	3	35	mg/kg	10.16.18 17:03	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		106		114		70-130	%	10.16.18 17:03
4-Bromofluorobenzene	86		108		112		70-130	%	10.16.18 17:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066646

Parent Sample Id: 602090-001

Matrix: Soil

MS Sample Id: 602090-001 S

Prep Method: SW5030B

Date Prep: 10.16.18

MSD Sample Id: 602090-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0951	95	0.0969	96	70-130	2	35	mg/kg	10.16.18 17:46	
Toluene	<0.00200	0.100	0.0809	81	0.0836	83	70-130	3	35	mg/kg	10.16.18 17:46	
Ethylbenzene	<0.00200	0.100	0.0924	92	0.0957	95	70-130	4	35	mg/kg	10.16.18 17:46	
m,p-Xylenes	<0.00401	0.200	0.188	94	0.196	98	70-130	4	35	mg/kg	10.16.18 17:46	
o-Xylene	<0.00200	0.100	0.0917	92	0.0937	93	70-130	2	35	mg/kg	10.16.18 17:46	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		95		70-130	%	10.16.18 17:46
4-Bromofluorobenzene	99		79		70-130	%	10.16.18 17:46

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

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

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

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



Chain of Custody

Work Order No.:

100/944

Houston, TX (281-240-4200) Dallas, TX (214) 902-0330 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)

Page _____ of _____
www.xenco.com

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Little
Company Name:	LT E	Company Name:	XTO
Address:	3300 N 'A' street Bldg #103	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:		Email:	ABaker@LTenv.com

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

Project Name:	Elk Wallaw 11state H	Turn Around
Project Number:	22RP4907	Route ☐
P.O. Number:	225611 date 10-3-2018	Rush:
Sampler's Name:	barrett + green	Due Date:

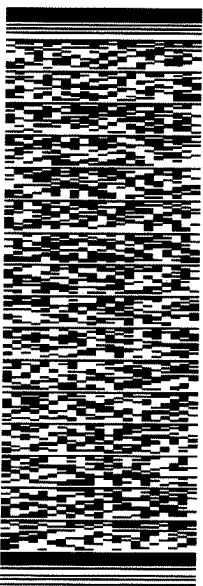
SAMPLE RECEIPT			
Temperature (°C):	Temp Blank:	Yes	No
Received Intact:	0-3	Yes	No
Cooler Custody Seals:	Yes	No	N/A
Sample Custody Seals:	Yes	No	N/A
		Total Containers:	

[illegible][illegible]

Circle Method(s) and Metal(s) to be analyzed	TCLP / SPLP 60010	8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	1631 / 245.1 / 7470 / 7471 : Hg
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	

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 Scott D. [Signature]	Carl M. [Signature]	1732/10/8/18	2 [Signature]	[Signature]	10/10/135
3			4		
5			6		

ORIGIN ID:CAOA (5/5) 887-8245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD NM 88220 UNITED STATES US	SHIP DATE: 09OCT18 ACTWGT: 24.00 LB CAD: 101813706/MET4040 DIMS: 20X14X12 IN BILL RECIPIENT
TO: HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276S MIDLAND TX 79711 (806) 794-1296 REF:	
DEPT:	
TRK# 7734 3563 1430 0201 WED - 10 OCT HOLD STANDARD OVERNIGHT HLD MAF A TX-US LBB 41 MAF A	
 	

552J1108FB/DCA5

After printing this label:

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

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

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Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/10/2018 01:55:00 PM

Work Order #: 601966

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 10/10/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/10/2018

Analytical Report 602092

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State #1H

012918147

18-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), 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 (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

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)

Xenco-Lakeland: Florida (E84098)



18-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **602092**

Elk Wallow 11 State #1H

Project Address: Eddy County 2RP4967

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) 602092. 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. 602092 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 602092****LT Environmental, Inc., Arvada, CO**

Elk Wallow 11 State #1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW03	S	10-08-18 12:35	5 ft	602092-001
SW04	S	10-08-18 15:30	6 ft	602092-002
FS10	S	10-08-18 14:15	11 ft	602092-003
SW05	S	10-09-18 09:50	6 ft	602092-004



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow 11 State #1H

Project ID: 012918147

Work Order Number(s): 602092

Report Date: 18-OCT-18

Date Received: 10/11/2018

Sample receipt non conformances and comments:

PER CLIENTS EMAIL REQUEST, CORRECTED SAMPLE DATES FOR SAMPLE SW05 FROM 10/08/2018 TO 10/09/2018. JKR 10/18/18 NEW VERSION GENERATED

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3066646 BTEX by EPA 8021B

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



Certificate of Analysis Summary 602092

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1H

Project Id: 012918147
Contact: Adrian Baker
Project Location: Eddy County 2RP4967

Date Received in Lab: Thu Oct-11-18 10:50 am
Report Date: 18-OCT-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	602092-001	602092-002	602092-003	602092-004		
	<i>Field Id:</i>	SW03	SW04	FS10	SW05		
	<i>Depth:</i>	5- ft	6- ft	11- ft	6- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Oct-08-18 12:35	Oct-08-18 15:30	Oct-08-18 14:15	Oct-09-18 09:50		
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-16-18 14:00	Oct-16-18 14:00	Oct-16-18 14:00	Oct-16-18 14:00		
	<i>Analyzed:</i>	Oct-17-18 01:11	Oct-17-18 01:32	Oct-17-18 01:53	Oct-17-18 02:15		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202		
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202		
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202		
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00402 0.00402	<0.00403 0.00403		
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202		
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202		
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202		
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-16-18 13:30	Oct-16-18 13:30	Oct-16-18 13:30	Oct-16-18 13:30		
	<i>Analyzed:</i>	Oct-16-18 23:45	Oct-17-18 00:02	Oct-17-18 00:07	Oct-17-18 00:24		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		147 5.00	9.12 4.95	108 4.95	108 4.96		
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-15-18 14:00	Oct-15-18 14:00	Oct-15-18 14:00	Oct-15-18 14:00		
	<i>Analyzed:</i>	Oct-15-18 23:24	Oct-15-18 23:43	Oct-16-18 00:40	Oct-16-18 00:59		
	<i>Units/RL:</i>	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	<14.9 14.9		
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9		
Total TPH		<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9		

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

 Jessica Kramer
 Project Assistant



Certificate of Analytical Results 602092



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **SW03**
Lab Sample Id: 602092-001

Matrix: Soil
Date Collected: 10.08.18 12.35

Date Received: 10.11.18 10.50
Sample Depth: 5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3066605

Date Prep: 10.16.18 13.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	5.00	mg/kg	10.16.18 23.45		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3066668

Date Prep: 10.15.18 14.00

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	10.15.18 23.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.15.18 23.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.15.18 23.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.15.18 23.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.15.18 23.24	
o-Terphenyl	84-15-1	97	%	70-135	10.15.18 23.24	



Certificate of Analytical Results 602092

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **SW03**
 Lab Sample Id: 602092-001

Matrix: Soil
 Date Collected: 10.08.18 12.35

Date Received: 10.11.18 10.50
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066646

Date Prep: 10.16.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.17.18 01.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.17.18 01.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.17.18 01.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.17.18 01.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.17.18 01.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.17.18 01.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.17.18 01.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.17.18 01.11		
1,4-Difluorobenzene	540-36-3	111	%	70-130	10.17.18 01.11		



Certificate of Analytical Results 602092

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **SW04**
 Lab Sample Id: 602092-002

Matrix: Soil
 Date Collected: 10.08.18 15.30

Date Received: 10.11.18 10.50
 Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3066605

Date Prep: 10.16.18 13.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.12	4.95	mg/kg	10.17.18 00.02		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3066668

Date Prep: 10.15.18 14.00

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	10.15.18 23.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.15.18 23.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.15.18 23.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.15.18 23.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	10.15.18 23.43	
o-Terphenyl	84-15-1	92	%	70-135	10.15.18 23.43	



Certificate of Analytical Results 602092

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **SW04**
 Lab Sample Id: 602092-002

Matrix: Soil
 Date Collected: 10.08.18 15.30

Date Received: 10.11.18 10.50
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066646

Date Prep: 10.16.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.17.18 01.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.17.18 01.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.17.18 01.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.17.18 01.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.17.18 01.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.17.18 01.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.17.18 01.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	121	%	70-130	10.17.18 01.32		
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.17.18 01.32		



Certificate of Analytical Results 602092

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **FS10** Matrix: Soil Date Received: 10.11.18 10.50
 Lab Sample Id: 602092-003 Date Collected: 10.08.18 14.15 Sample Depth: 11 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.16.18 13.30 Basis: Wet Weight
 Seq Number: 3066605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	108	4.95	mg/kg	10.17.18 00.07		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.15.18 14.00 Basis: Wet Weight
 Seq Number: 3066668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.16.18 00.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.16.18 00.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.16.18 00.40	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.16.18 00.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.16.18 00.40	
o-Terphenyl	84-15-1	96	%	70-135	10.16.18 00.40	



Certificate of Analytical Results 602092

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **FS10**
 Lab Sample Id: 602092-003

Matrix: Soil
 Date Collected: 10.08.18 14.15

Date Received: 10.11.18 10.50
 Sample Depth: 11 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066646

Date Prep: 10.16.18 14.00

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	10.17.18 01.53	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.17.18 01.53	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.17.18 01.53	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.17.18 01.53	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.17.18 01.53	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.17.18 01.53	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.17.18 01.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.17.18 01.53		
1,4-Difluorobenzene	540-36-3	111	%	70-130	10.17.18 01.53		



Certificate of Analytical Results 602092

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **SW05** Matrix: Soil Date Received: 10.11.18 10.50
 Lab Sample Id: 602092-004 Date Collected: 10.09.18 09.50 Sample Depth: 6 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.16.18 13.30 Basis: Wet Weight
 Seq Number: 3066605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	108	4.96	mg/kg	10.17.18 00.24		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.15.18 14.00 Basis: Wet Weight
 Seq Number: 3066668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.16.18 00.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.16.18 00.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.16.18 00.59	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.16.18 00.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.16.18 00.59	
o-Terphenyl	84-15-1	97	%	70-135	10.16.18 00.59	



Certificate of Analytical Results 602092

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **SW05**
 Lab Sample Id: 602092-004

Matrix: Soil
 Date Collected: 10.09.18 09.50

Date Received: 10.11.18 10.50
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066646

Date Prep: 10.16.18 14.00

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	10.17.18 02.15	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.17.18 02.15	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.17.18 02.15	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.17.18 02.15	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.17.18 02.15	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.17.18 02.15	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.17.18 02.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	127	%	70-130	10.17.18 02.15		
4-Bromofluorobenzene	460-00-4	107	%	70-130	10.17.18 02.15		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State #1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066605

MB Sample Id: 7664248-1-BLK

Matrix: Solid

LCS Sample Id: 7664248-1-BKS

Prep Method: E300P

Date Prep: 10.16.18

LCSD Sample Id: 7664248-1-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	259	104	253	101	90-110	2	20	mg/kg	10.16.18 22:13	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066605

Parent Sample Id: 602090-001

Matrix: Soil

MS Sample Id: 602090-001 S

Prep Method: E300P

Date Prep: 10.16.18

MSD Sample Id: 602090-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	256	102	260	104	90-110	2	20	mg/kg	10.16.18 22:30	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066605

Parent Sample Id: 602092-001

Matrix: Soil

MS Sample Id: 602092-001 S

Prep Method: E300P

Date Prep: 10.16.18

MSD Sample Id: 602092-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	147	250	404	103	398	100	90-110	1	20	mg/kg	10.16.18 23:50	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066668

MB Sample Id: 7664241-1-BLK

Matrix: Solid

LCS Sample Id: 7664241-1-BKS

Prep Method: TX1005P

Date Prep: 10.15.18

LCSD Sample Id: 7664241-1-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	953	95	947	95	70-135	1	20	mg/kg	10.15.18 19:35	
Diesel Range Organics (DRO)	<8.13	1000	987	99	973	97	70-135	1	20	mg/kg	10.15.18 19:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		116		126		70-135	%	10.15.18 19:35
o-Terphenyl	103		96		101		70-135	%	10.15.18 19:35

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State #1H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066668

Parent Sample Id: 602090-001

Matrix: Soil

MS Sample Id: 602090-001 S

Prep Method: TX1005P

Date Prep: 10.15.18

MSD Sample Id: 602090-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	14.3	999	850	84	892	88	70-135	5	20	mg/kg	10.15.18 20:32	
Diesel Range Organics (DRO)	<8.12	999	923	92	973	98	70-135	5	20	mg/kg	10.15.18 20:32	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		122		70-135	%	10.15.18 20:32
o-Terphenyl	84		89		70-135	%	10.15.18 20:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066646

MB Sample Id: 7664314-1-BLK

Matrix: Solid

LCS Sample Id: 7664314-1-BKS

Prep Method: SW5030B

Date Prep: 10.16.18

LCSD Sample Id: 7664314-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.108	107	0.109	109	70-130	1	35	mg/kg	10.16.18 17:03	
Toluene	<0.00202	0.101	0.0934	92	0.0938	94	70-130	0	35	mg/kg	10.16.18 17:03	
Ethylbenzene	<0.00202	0.101	0.107	106	0.108	108	70-130	1	35	mg/kg	10.16.18 17:03	
m,p-Xylenes	<0.00403	0.202	0.221	109	0.223	111	70-130	1	35	mg/kg	10.16.18 17:03	
o-Xylene	<0.00202	0.101	0.106	105	0.109	109	70-130	3	35	mg/kg	10.16.18 17:03	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		106		114		70-130	%	10.16.18 17:03
4-Bromofluorobenzene	86		108		112		70-130	%	10.16.18 17:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066646

Parent Sample Id: 602090-001

Matrix: Soil

MS Sample Id: 602090-001 S

Prep Method: SW5030B

Date Prep: 10.16.18

MSD Sample Id: 602090-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0951	95	0.0969	96	70-130	2	35	mg/kg	10.16.18 17:46	
Toluene	<0.00200	0.100	0.0809	81	0.0836	83	70-130	3	35	mg/kg	10.16.18 17:46	
Ethylbenzene	<0.00200	0.100	0.0924	92	0.0957	95	70-130	4	35	mg/kg	10.16.18 17:46	
m,p-Xylenes	<0.00401	0.200	0.188	94	0.196	98	70-130	4	35	mg/kg	10.16.18 17:46	
o-Xylene	<0.00200	0.100	0.0917	92	0.0937	93	70-130	2	35	mg/kg	10.16.18 17:46	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		95		70-130	%	10.16.18 17:46
4-Bromofluorobenzene	99		79		70-130	%	10.16.18 17:46

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

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

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

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



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

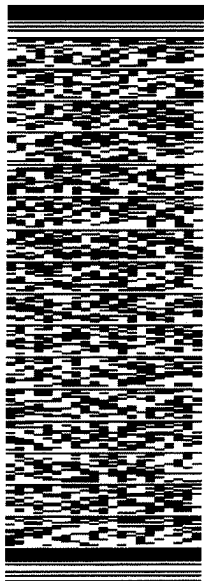
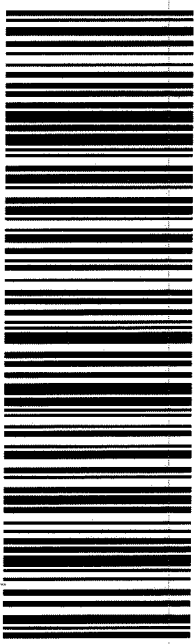
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

CHAIN OF C STUDY

Page 1 of 1

Client / Reporting Information Company Name / Branch: <u>Environmental, Inc.</u> <u>Pelican Office</u> Company Address: <u>3300 W 1st St. Building Unit 103</u> <u>Milford, TX 75702</u> Email: <u>ababerg@env.com</u> <u>(432) 704-5178</u> Project Contact: <u>Adrian Baker</u> Sampler's Name: <u>Anna Byers</u>				Project Information Project Name/Number: <u>012918147</u> Project Location: <u>Elk Hollow II State #14</u> Invoice To: <u>Eddy County ARPA 9167</u> PO Number: <u>XTO: Kyle Littrell</u>			
Field ID / Point of Collection No. <u>1</u> <u>SWD3</u> <u>5'</u> <u>10/08 12:35</u> <u>3</u> <u>1</u> <u>TPH by SW8015 Mod</u> <u>2</u> <u>SWD4</u> <u>6'</u> <u>10/08 15:30</u> <u>3</u> <u>1</u> <u>BTEX by EPA 8021B</u> <u>3</u> <u>ES10</u> <u>11'</u> <u>10/08 14:15</u> <u>3</u> <u>1</u> <u>Chloride by EPA 300</u> <u>4</u> <u>SWD5</u> <u>6'</u> <u>10/09 09:50</u> <u>3</u> <u>1</u> <u></u> <u>5</u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u>6</u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u>7</u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u>8</u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u>9</u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u>10</u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u>				Turnaround Time (Business days) <u>5</u> <u>Day TAT</u> <u>Next Day EMERGENCY</u> <u>2 Day EMERGENCY</u> <u>3 Day EMERGENCY</u>			
Turnaround Time (Business days) <u>5</u> <u>Day TAT</u> <u>Next Day EMERGENCY</u> <u>2 Day EMERGENCY</u> <u>3 Day EMERGENCY</u>				Data Deliverable Information ☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data) ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐ Level 3 (CLP Forms) ☐ UST / RG -411 ☐ TRRP Checklist			
TAT Starts Day received by Lab, if received by 5:00 pm Relinquished by Sampler: <u>Anna Byers</u> <u>10/09/18</u> Relinquished by: <u>Anna Byers</u> <u>10/09/18</u> Relinquished by: <u>Anna Byers</u> <u>10/09/18</u>				Field Comments <u>average depth (6'-10')</u> <u>average depth (4'-8')</u> <u>average depth (10'-12')</u> <u>average depth (4'-8')</u>			
Matrix Codes W = Water S = Soil/Sediment GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WM = Waste Water A = Air				Matrix Codes W = Water S = Soil/Sediment GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WM = Waste Water A = Air			

ORIGIN ID:CAOA (575) 887-6245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US	SHIP DATE: 10OCT18 ACTWGT: 41.00 LB CAD: 101813/06INET40-40 DIMS: 24x15x14 IN BILL RECIPIENT
TO HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711 (806) 794-1296 INV. REF. PO. DEPT.	
 	
TRK# 7734 4644 1189 0201 41 MAFA TX-US LBB	THU - 11 OCT HOLD STANDARD OVERNIGHT HLD MAFA LBB
	

552J188FB/DCA5

After printing this label:

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

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Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/11/2018 10:50:00 AM

Work Order #: 602092

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	No	Sample container for 004 was received slightly cracked. We were still able to extract
#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: 10/11/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/11/2018

Analytical Report 602462

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State 1H

012918147

22-OCT-18

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 (T104704219-18-17)

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)

Xenco-Lakeland: Florida (E84098)



22-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **602462**

Elk Wallow 11 State 1H

Project Address: Eddy County 2RP4962

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) 602462. 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. 602462 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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**Sample Cross Reference 602462****LT Environmental, Inc., Arvada, CO**

Elk Wallow 11 State 1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW08	S	10-12-18 14:25	6.0 ft	602462-001
SW06	S	10-11-18 15:35	2.0 ft	602462-002
FS14	S	10-12-18 13:55	5.0 ft	602462-003
FS13	S	10-12-18 13:45	5.0 ft	602462-004
SW07	S	10-11-18 14:45	1.0 ft	602462-005
FS12	S	10-11-18 14:10	4.0 ft	602462-006
FS11	S	10-11-18 13:00	3.5 ft	602462-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow 11 State 1H

Project ID: 012918147
Work Order Number(s): 602462

Report Date: 22-OCT-18
Date Received: 10/16/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3066898 BTEX by EPA 8021B

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



Certificate of Analysis Summary 602462

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State 1H



Project Id: 012918147
Contact: Adrian Baker
Project Location: Eddy County 2RP4962

Date Received in Lab: Tue Oct-16-18 01:15 pm
Report Date: 22-OCT-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	602462-001	602462-002	602462-003	602462-004	602462-005	602462-006
	<i>Field Id:</i>	SW08	SW06	FS14	FS13	SW07	FS12
	<i>Depth:</i>	6.0- ft	2.0- ft	5.0- ft	5.0- ft	1.0- ft	4.0- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-12-18 14:25	Oct-11-18 15:35	Oct-12-18 13:55	Oct-12-18 13:45	Oct-11-18 14:45	Oct-11-18 14:10
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-18-18 16:00	Oct-18-18 16:00	Oct-18-18 16:00	Oct-18-18 16:00	Oct-18-18 16:00	Oct-18-18 16:00
	<i>Analyzed:</i>	Oct-19-18 04:10	Oct-19-18 04:32	Oct-19-18 06:19	Oct-19-18 06:40	Oct-19-18 07:01	Oct-19-18 07:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	0.0184 0.00403	<0.00399 0.00399	<0.00398 0.00398	<0.00401 0.00401
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201	0.0184 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00201 0.00201	0.0184 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-19-18 13:00	Oct-19-18 13:00	Oct-19-18 13:00	Oct-19-18 13:00	Oct-19-18 09:30	Oct-19-18 09:30
	<i>Analyzed:</i>	Oct-20-18 18:36	Oct-20-18 18:41	Oct-20-18 18:46	Oct-20-18 18:52	Oct-19-18 13:27	Oct-19-18 13:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		392 4.98	339 4.97	289 5.02	713 4.98	3620 25.1	385 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-17-18 17:00	Oct-17-18 17:00	Oct-17-18 17:00	Oct-17-18 17:00	Oct-17-18 17:00	Oct-17-18 17:00
	<i>Analyzed:</i>	Oct-17-18 21:06	Oct-17-18 22:01	Oct-17-18 22:19	Oct-17-18 22:38	Oct-17-18 22:56	Oct-17-18 23:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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 - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 602462

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State 1H

Project Id: 012918147
Contact: Adrian Baker
Project Location: Eddy County 2RP4962

Date Received in Lab: Tue Oct-16-18 01:15 pm
Report Date: 22-OCT-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 602462-007 Field Id: FS11 Depth: 3.5- ft Matrix: SOIL Sampled: Oct-11-18 13:00					
BTEX by EPA 8021B	Extracted: Oct-18-18 16:00 Analyzed: Oct-19-18 07:44 Units/RL: mg/kg RL					
Benzene	<0.00201 0.00201					
Toluene	<0.00201 0.00201					
Ethylbenzene	<0.00201 0.00201					
m,p-Xylenes	<0.00402 0.00402					
o-Xylene	<0.00201 0.00201					
Total Xylenes	<0.00201 0.00201					
Total BTEX	<0.00201 0.00201					
Inorganic Anions by EPA 300	Extracted: Oct-19-18 09:30 Analyzed: Oct-19-18 14:09 Units/RL: mg/kg RL					
Chloride	403 4.99					
TPH by SW8015 Mod	Extracted: Oct-17-18 17:00 Analyzed: Oct-17-18 23:33 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<15.0 15.0					
Diesel Range Organics (DRO)	<15.0 15.0					
Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0					
Total TPH	<15.0 15.0					

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

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 602462



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW08**
Lab Sample Id: 602462-001

Matrix: Soil
Date Collected: 10.12.18 14.25

Date Received: 10.16.18 13.15
Sample Depth: 6.0 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3067042

Date Prep: 10.19.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	392	4.98	mg/kg	10.20.18 18.36		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3066699

Date Prep: 10.17.18 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	10.17.18 21.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.17.18 21.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.17.18 21.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.17.18 21.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.17.18 21.06	
o-Terphenyl	84-15-1	100	%	70-135	10.17.18 21.06	



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW08**
 Lab Sample Id: 602462-001

Matrix: Soil
 Date Collected: 10.12.18 14.25

Date Received: 10.16.18 13.15
 Sample Depth: 6.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066898

Date Prep: 10.18.18 16.00

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	10.19.18 04.10	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.19.18 04.10	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.19.18 04.10	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.19.18 04.10	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.19.18 04.10	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.19.18 04.10	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.19.18 04.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	116	%	70-130	10.19.18 04.10		
4-Bromofluorobenzene	460-00-4	113	%	70-130	10.19.18 04.10		



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW06** Matrix: Soil Date Received: 10.16.18 13.15
 Lab Sample Id: 602462-002 Date Collected: 10.11.18 15.35 Sample Depth: 2.0 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.19.18 13.00 Basis: Wet Weight
 Seq Number: 3067042

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	339	4.97	mg/kg	10.20.18 18.41		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.17.18 17.00 Basis: Wet Weight
 Seq Number: 3066699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.17.18 22.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.17.18 22.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.17.18 22.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.17.18 22.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.17.18 22.01	
o-Terphenyl	84-15-1	96	%	70-135	10.17.18 22.01	



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW06**
 Lab Sample Id: 602462-002

Matrix: Soil
 Date Collected: 10.11.18 15.35

Date Received: 10.16.18 13.15
 Sample Depth: 2.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066898

Date Prep: 10.18.18 16.00

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	10.19.18 04.32	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.19.18 04.32	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.19.18 04.32	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.19.18 04.32	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.19.18 04.32	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.19.18 04.32	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.19.18 04.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	10.19.18 04.32		
1,4-Difluorobenzene	540-36-3	115	%	70-130	10.19.18 04.32		



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS14** Matrix: Soil Date Received: 10.16.18 13.15
 Lab Sample Id: 602462-003 Date Collected: 10.12.18 13.55 Sample Depth: 5.0 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.19.18 13.00 Basis: Wet Weight
 Seq Number: 3067042

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	289	5.02	mg/kg	10.20.18 18.46		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.17.18 17.00 Basis: Wet Weight
 Seq Number: 3066699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.17.18 22.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.17.18 22.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.17.18 22.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.17.18 22.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.17.18 22.19	
o-Terphenyl	84-15-1	89	%	70-135	10.17.18 22.19	



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS14**
 Lab Sample Id: 602462-003

Matrix: Soil
 Date Collected: 10.12.18 13.55

Date Received: 10.16.18 13.15
 Sample Depth: 5.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066898

Date Prep: 10.18.18 16.00

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	10.19.18 06.19	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.19.18 06.19	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.19.18 06.19	U	1
m,p-Xylenes	179601-23-1	0.0184	0.00403	mg/kg	10.19.18 06.19		1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.19.18 06.19	U	1
Total Xylenes	1330-20-7	0.0184	0.00202	mg/kg	10.19.18 06.19		1
Total BTEX		0.0184	0.00202	mg/kg	10.19.18 06.19		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	82	%	70-130	10.19.18 06.19		
1,4-Difluorobenzene	540-36-3	128	%	70-130	10.19.18 06.19		



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS13** Matrix: Soil Date Received: 10.16.18 13.15
 Lab Sample Id: 602462-004 Date Collected: 10.12.18 13.45 Sample Depth: 5.0 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.19.18 13.00 Basis: Wet Weight
 Seq Number: 3067042

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	713	4.98	mg/kg	10.20.18 18.52		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.17.18 17.00 Basis: Wet Weight
 Seq Number: 3066699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.17.18 22.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.17.18 22.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.17.18 22.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.17.18 22.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.17.18 22.38	
o-Terphenyl	84-15-1	90	%	70-135	10.17.18 22.38	



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS13**
 Lab Sample Id: 602462-004

Matrix: Soil
 Date Collected: 10.12.18 13.45

Date Received: 10.16.18 13.15
 Sample Depth: 5.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066898

Date Prep: 10.18.18 16.00

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	10.19.18 06.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.19.18 06.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.19.18 06.40	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.19.18 06.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.19.18 06.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.19.18 06.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.19.18 06.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.19.18 06.40		
1,4-Difluorobenzene	540-36-3	110	%	70-130	10.19.18 06.40		



Certificate of Analytical Results 602462



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW07**
Lab Sample Id: 602462-005

Matrix: Soil
Date Collected: 10.11.18 14.45

Date Received: 10.16.18 13.15
Sample Depth: 1.0 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3066959

Date Prep: 10.19.18 09.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3620	25.1	mg/kg	10.19.18 13.27		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3066699

Date Prep: 10.17.18 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	10.17.18 22.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.17.18 22.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.17.18 22.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.17.18 22.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	10.17.18 22.56		
o-Terphenyl	84-15-1	102	%	70-135	10.17.18 22.56		



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW07**
 Lab Sample Id: 602462-005

Matrix: Soil
 Date Collected: 10.11.18 14.45

Date Received: 10.16.18 13.15
 Sample Depth: 1.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066898

Date Prep: 10.18.18 16.00

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	10.19.18 07.01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.19.18 07.01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.19.18 07.01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.19.18 07.01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.19.18 07.01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.19.18 07.01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.19.18 07.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.19.18 07.01		
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.19.18 07.01		



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS12** Matrix: Soil Date Received: 10.16.18 13.15
 Lab Sample Id: 602462-006 Date Collected: 10.11.18 14.10 Sample Depth: 4.0 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: SCM Date Prep: 10.19.18 09.30 Basis: Wet Weight
 Seq Number: 3066959

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	385	5.00	mg/kg	10.19.18 13.38		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.17.18 17.00 Basis: Wet Weight
 Seq Number: 3066699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.17.18 23.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.17.18 23.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.17.18 23.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.17.18 23.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.17.18 23.14	
o-Terphenyl	84-15-1	98	%	70-135	10.17.18 23.14	



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS12**
 Lab Sample Id: 602462-006

Matrix: Soil
 Date Collected: 10.11.18 14.10

Date Received: 10.16.18 13.15
 Sample Depth: 4.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066898

Date Prep: 10.18.18 16.00

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	10.19.18 07.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.19.18 07.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.19.18 07.23	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.19.18 07.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.19.18 07.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.19.18 07.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.19.18 07.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	10.19.18 07.23		
1,4-Difluorobenzene	540-36-3	111	%	70-130	10.19.18 07.23		



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS11** Matrix: Soil Date Received: 10.16.18 13.15
 Lab Sample Id: 602462-007 Date Collected: 10.11.18 13.00 Sample Depth: 3.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: SCM Date Prep: 10.19.18 09.30 Basis: Wet Weight
 Seq Number: 3066959

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	403	4.99	mg/kg	10.19.18 14.09		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.17.18 17.00 Basis: Wet Weight
 Seq Number: 3066699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.17.18 23.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.17.18 23.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.17.18 23.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.17.18 23.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.17.18 23.33	
o-Terphenyl	84-15-1	95	%	70-135	10.17.18 23.33	



Certificate of Analytical Results 602462

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS11**
 Lab Sample Id: 602462-007

Matrix: Soil
 Date Collected: 10.11.18 13.00

Date Received: 10.16.18 13.15
 Sample Depth: 3.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066898

Date Prep: 10.18.18 16.00

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	10.19.18 07.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.19.18 07.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.19.18 07.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.19.18 07.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.19.18 07.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.19.18 07.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.19.18 07.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.19.18 07.44		
1,4-Difluorobenzene	540-36-3	123	%	70-130	10.19.18 07.44		



Flagging Criteria



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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066959

MB Sample Id: 7664459-1-BLK

Matrix: Solid

LCS Sample Id: 7664459-1-BKS

Prep Method: E300P

Date Prep: 10.19.18

LCSD Sample Id: 7664459-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	264	106	264	106	90-110	0	20	mg/kg	10.19.18 10:11	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067042

MB Sample Id: 7664551-1-BLK

Matrix: Solid

LCS Sample Id: 7664551-1-BKS

Prep Method: E300P

Date Prep: 10.19.18

LCSD Sample Id: 7664551-1-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	268	107	262	105	90-110	2	20	mg/kg	10.20.18 04:43	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066959

Parent Sample Id: 602835-001

Matrix: Soil

MS Sample Id: 602835-001 S

Prep Method: E300P

Date Prep: 10.19.18

MSD Sample Id: 602835-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	25.7	250	274	99	274	99	90-110	0	20	mg/kg	10.19.18 10:42	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066959

Parent Sample Id: 602835-011

Matrix: Soil

MS Sample Id: 602835-011 S

Prep Method: E300P

Date Prep: 10.19.18

MSD Sample Id: 602835-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17.0	249	244	91	244	91	90-110	0	20	mg/kg	10.19.18 13:07	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067042

Parent Sample Id: 602694-034

Matrix: Soil

MS Sample Id: 602694-034 S

Prep Method: E300P

Date Prep: 10.19.18

MSD Sample Id: 602694-034 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	271	108	265	106	90-110	2	20	mg/kg	10.20.18 04:59	

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067042

Parent Sample Id: 602695-002

Matrix: Soil

MS Sample Id: 602695-002 S

Prep Method: E300P

Date Prep: 10.19.18

MSD Sample Id: 602695-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	73.2	250	335	105	331	103	90-110	1	20	mg/kg	10.20.18 17:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066699

MB Sample Id: 7664343-1-BLK

Matrix: Solid

LCS Sample Id: 7664343-1-BKS

Prep Method: TX1005P

Date Prep: 10.17.18

LCSD Sample Id: 7664343-1-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	941	94	1020	102	70-135	8	20	mg/kg	10.17.18 20:29	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	1080	108	70-135	0	20	mg/kg	10.17.18 20:29	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		127		126		70-135	%	10.17.18 20:29
o-Terphenyl	112		102		110		70-135	%	10.17.18 20:29

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066699

Parent Sample Id: 602462-001

Matrix: Soil

MS Sample Id: 602462-001 S

Prep Method: TX1005P

Date Prep: 10.17.18

MSD Sample Id: 602462-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	984	98	986	99	70-135	0	20	mg/kg	10.17.18 21:24	
Diesel Range Organics (DRO)	13.6	999	1080	107	1050	104	70-135	3	20	mg/kg	10.17.18 21:24	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		120		70-135	%	10.17.18 21:24
o-Terphenyl	112		104		70-135	%	10.17.18 21:24

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066898

MB Sample Id: 7664468-1-BLK

Matrix: Solid

LCS Sample Id: 7664468-1-BKS

Prep Method: SW5030B

Date Prep: 10.18.18

LCSD Sample Id: 7664468-1-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	0.120	120	0.120	120	70-130	0	35	mg/kg	10.18.18 23:53	
Toluene	<0.00200	0.0998	0.105	105	0.108	108	70-130	3	35	mg/kg	10.18.18 23:53	
Ethylbenzene	<0.00200	0.0998	0.114	114	0.122	122	70-130	7	35	mg/kg	10.18.18 23:53	
m,p-Xylenes	<0.00399	0.200	0.236	118	0.247	124	70-130	5	35	mg/kg	10.18.18 23:53	
o-Xylene	<0.00200	0.0998	0.115	115	0.121	121	70-130	5	35	mg/kg	10.18.18 23:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		116		116		70-130	%	10.18.18 23:53
4-Bromofluorobenzene	101		123		127		70-130	%	10.18.18 23:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066898

Parent Sample Id: 602357-002

Matrix: Soil

MS Sample Id: 602357-002 S

Prep Method: SW5030B

Date Prep: 10.18.18

MSD Sample Id: 602357-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0827	83	0.107	106	70-130	26	35	mg/kg	10.19.18 00:35	
Toluene	<0.00201	0.100	0.0736	74	0.0872	86	70-130	17	35	mg/kg	10.19.18 00:35	
Ethylbenzene	<0.00201	0.100	0.0883	88	0.0927	92	70-130	5	35	mg/kg	10.19.18 00:35	
m,p-Xylenes	<0.00402	0.201	0.177	88	0.183	91	70-130	3	35	mg/kg	10.19.18 00:35	
o-Xylene	<0.00201	0.100	0.0840	84	0.0889	88	70-130	6	35	mg/kg	10.19.18 00:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		123		70-130	%	10.19.18 00:35
4-Bromofluorobenzene	118		129		70-130	%	10.19.18 00:35

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

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

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

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



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CHAIN OF CUSTODY

Page 1 of 1

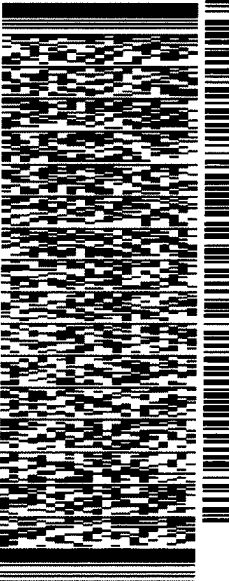
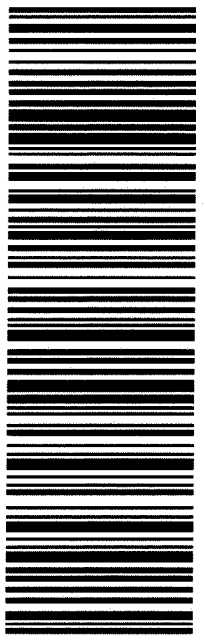
San Antonio, Texas (210-508-3334)
 Midland, Texas (432-704-5261)

www.xenoco.com

Phoenix, Arizona (480-355-0800)

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes									
Company Name / Branch: IT Environmental, Inc. Pelina Office				Project Name/Number: 012918147				Xenoco Queue #				Xenoco Job #									
Company Address: 300 West St. Building 1 Unit 103 Midland, TX 79701				Project Location: Elle Walden II State 1H																	
Email: ahabero@itenv.com Phone No: (432) 704-5178				Invoice To: Eddy County 2884967																	
Project Contact: Adrian Baker				XTO: Kyle Littrell																	
Sampler's Name: Anna Byers				PO Number:																	
No. Field ID / Point of Collection																					
1	SWP8	Sample Depth	6.0'	Date	10/12	Time	14:25	Matrix	S	# of bottles	1	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX (only BTEX) 8021	TPH (DRO GRO MPO) 8015	Chloride (300.00)
2	SWP6	Sample Depth	2.0'	Date	10/11	Time	15:35	Matrix	S	# of bottles	1	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	X	X	X
3	ES14	Sample Depth	5.0'	Date	10/12	Time	13:55	Matrix	S	# of bottles	1	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	X	X	X
4	ES13	Sample Depth	5.0'	Date	10/12	Time	13:45	Matrix	S	# of bottles	1	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	X	X	X
5	SWP2	Sample Depth	1.0'	Date	10/11	Time	14:45	Matrix	S	# of bottles	1	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	X	X	X
6	ES12	Sample Depth	4.0'	Date	10/11	Time	14:10	Matrix	S	# of bottles	1	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	X	X	X
7	ES11	Sample Depth	3.5'	Date	10/11	Time	13:00	Matrix	S	# of bottles	1	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	X	X	X
8																					
9																					
10																					
Turnaround Time (Business days)																					
Same Day TAT				☒ 5 Day TAT				Level II Std QC				☐ Level IV (Full Data Pkg / raw data)									
Next Day EMERGENCY				☐ 7 Day TAT				Level III Std QC+ Forms				TRRP Level IV									
2 Day EMERGENCY				☐ Contract TAT				Level 3 (CLP Forms)				UST / RG 411									
3 Day EMERGENCY				☐ TRRP Checklist																	
TAT Starts Day received by Lab, if received by 5:00 pm																					
Relinquished by Sampler:				SAMPLE CUSTODY MUST BE DOCUMENTED BEFORE ANY TIME SAMPLES CHANGE POSSESSION, INCLUDING PROPER DELIVERY																	
1. Anna Byers				Date Time: 10/15/18				Received By: [Signature]				Date Time: 10/15/18									
Relinquished by:				Date Time:				Received By:				Date Time:									
3. [Signature]				Date Time:				Received By:				Date Time:									
Relinquished by:				Date Time:				Received By:				Date Time:									
5. [Signature]				Date Time:				Received By:				Date Time:									
FED-EX / UPS: Tracking # 7734981058121																					
On Ice				☒				Cooler Temp. 13.5				Thermo. Corr. Factor 0.8									

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco 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 Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:CA0A (575) 887-8245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US	SHIP DATE: 15OCT18 ACT WGT: 28.00 LB CAD: 10/18/13/06/NET/40-40 DIMS: 24x15x12 IN BILL RECIPIENT
TO HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711 (806) 794-1296 REF:	
PO: DEPT:	
 	
TRK# 7734 8165 8181 0201	TUE - 16 OCT HOLD STANDARD OVERNIGHT HLD MAFA TX-US LBB
	

552J1/88FB/DCA5

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Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/16/2018 01:15:00 PM

Work Order #: 602462

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

Date: 10/16/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/17/2018

Analytical Report 602720

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State #1H

012918147

19-OCT-18

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 (T104704219-18-17)

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)

Xenco-Lakeland: Florida (E84098)



19-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **602720**

Elk Wallow 11 State #1H

Project Address: Eddy County 2RP-4967

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) 602720. 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. 602720 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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**Sample Cross Reference 602720****LT Environmental, Inc., Arvada, CO**

Elk Wallow 11 State #1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS17	S	10-15-18 11:00	3.0 ft	602720-001
SW10	S	10-15-18 11:20	5.0 ft	602720-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow 11 State #1H

Project ID: 012918147

Work Order Number(s): 602720

Report Date: 19-OCT-18

Date Received: 10/18/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3066834 BTEX by EPA 8021B

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



Certificate of Analysis Summary 602720

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1H

Project Id: 012918147
Contact: Adrian Baker
Project Location: Eddy County 2RP-4967

Date Received in Lab: Thu Oct-18-18 10:40 am
Report Date: 19-OCT-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	602720-001	602720-002				
	Field Id:	FS17	SW10				
	Depth:	3.0- ft	5.0- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Oct-15-18 11:00	Oct-15-18 11:20				
BTEX by EPA 8021B	Extracted:	*** ** *		*** ** *			
	Analyzed:	Oct-18-18 18:08		Oct-18-18 18:30			
	Units/RL:	mg/kg	RL	mg/kg	RL		
	Benzene	<0.00200	0.00200	<0.00200	0.00200		
	Toluene	<0.00200	0.00200	<0.00200	0.00200		
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200		
m,p-Xylenes		<0.00399	0.00399	<0.00401	0.00401		
o-Xylene		<0.00200	0.00200	<0.00200	0.00200		
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200		
Total BTEX		<0.00200	0.00200	<0.00200	0.00200		
Inorganic Anions by EPA 300	Extracted:	Oct-18-18 13:00		Oct-18-18 13:00			
	Analyzed:	Oct-19-18 11:54		Oct-19-18 11:59			
	Units/RL:	mg/kg	RL	mg/kg	RL		
	Chloride	352	5.00	726	5.00		
TPH by SW8015 Mod	Extracted:	Oct-18-18 13:00		Oct-18-18 13:00			
	Analyzed:	Oct-19-18 07:25		Oct-19-18 01:51			
	Units/RL:	mg/kg	RL	mg/kg	RL		
	Gasoline Range Hydrocarbons (GRO)	<15.0	15.0	<15.0	15.0		
	Diesel Range Organics (DRO)	<15.0	15.0	<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0		
Total TPH		<15.0	15.0	<15.0	15.0		

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 - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

 Jessica Kramer
Project Assistant



Certificate of Analytical Results 602720

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **FS17** Matrix: Soil Date Received: 10.18.18 10.40
 Lab Sample Id: 602720-001 Date Collected: 10.15.18 11.00 Sample Depth: 3.0 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.18.18 13.00 Basis: Wet Weight
 Seq Number: 3066907

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	352	5.00	mg/kg	10.19.18 11.54		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.18.18 13.00 Basis: Wet Weight
 Seq Number: 3066919

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.19.18 07.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.19.18 07.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.19.18 07.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.19.18 07.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.19.18 07.25	
o-Terphenyl	84-15-1	103	%	70-135	10.19.18 07.25	



Certificate of Analytical Results 602720

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **FS17**
 Lab Sample Id: 602720-001

Matrix: Soil
 Date Collected: 10.15.18 11.00

Date Received: 10.18.18 10.40
 Sample Depth: 3.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066834

Date Prep: 10.18.18 10.00

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	10.18.18 18.08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.18 18.08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.18 18.08	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.18.18 18.08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.18 18.08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.18 18.08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.18 18.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	124	%	70-130	10.18.18 18.08		
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.18.18 18.08		



Certificate of Analytical Results 602720

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **SW10** Matrix: Soil Date Received: 10.18.18 10.40
 Lab Sample Id: 602720-002 Date Collected: 10.15.18 11.20 Sample Depth: 5.0 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.18.18 13.00 Basis: Wet Weight
 Seq Number: 3066907

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	726	5.00	mg/kg	10.19.18 11.59		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.18.18 13.00 Basis: Wet Weight
 Seq Number: 3066919

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.19.18 01.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.19.18 01.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.19.18 01.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.19.18 01.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.19.18 01.51	
o-Terphenyl	84-15-1	100	%	70-135	10.19.18 01.51	



Certificate of Analytical Results 602720

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1H

Sample Id: **SW10**
 Lab Sample Id: 602720-002

Matrix: Soil
 Date Collected: 10.15.18 11.20

Date Received: 10.18.18 10.40
 Sample Depth: 5.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3066834

Date Prep: 10.18.18 10.00

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	10.18.18 18.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.18 18.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.18 18.30	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.18.18 18.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.18 18.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.18 18.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.18 18.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	10.18.18 18.30		
1,4-Difluorobenzene	540-36-3	114	%	70-130	10.18.18 18.30		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State #1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066907

MB Sample Id: 7664400-1-BLK

Matrix: Solid

LCS Sample Id: 7664400-1-BKS

Prep Method: E300P

Date Prep: 10.18.18

LCSD Sample Id: 7664400-1-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	274	110	274	110	90-110	0	20	mg/kg	10.19.18 11:16	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3066907

Parent Sample Id: 602472-015

Matrix: Soil

MS Sample Id: 602472-015 S

Prep Method: E300P

Date Prep: 10.18.18

MSD Sample Id: 602472-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.857	250	273	109	274	110	90-110	0	20	mg/kg	10.19.18 11:32	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066919

MB Sample Id: 7664441-1-BLK

Matrix: Solid

LCS Sample Id: 7664441-1-BKS

Prep Method: TX1005P

Date Prep: 10.18.18

LCSD Sample Id: 7664441-1-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	985	99	957	96	70-135	3	20	mg/kg	10.18.18 17:48	
Diesel Range Organics (DRO)	<8.13	1000	984	98	954	95	70-135	3	20	mg/kg	10.18.18 17:48	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1-Chlorooctane	95		119		130		70-135			%	10.18.18 17:48	
o-Terphenyl	101		104		106		70-135			%	10.18.18 17:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3066919

Parent Sample Id: 602472-001

Matrix: Soil

MS Sample Id: 602472-001 S

Prep Method: TX1005P

Date Prep: 10.18.18

MSD Sample Id: 602472-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	14.0	998	939	93	958	95	70-135	2	20	mg/kg	10.18.18 18:43	
Diesel Range Organics (DRO)	<8.11	998	953	95	959	96	70-135	1	20	mg/kg	10.18.18 18:43	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag	Limits		Units	Analysis Date	
1-Chlorooctane			117			128		70-135		%	10.18.18 18:43	
o-Terphenyl			102			113		70-135		%	10.18.18 18:43	

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State #1H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066834

MB Sample Id: 7664423-1-BLK

Matrix: Solid

LCS Sample Id: 7664423-1-BKS

Prep Method: SW5030B

Date Prep: 10.18.18

LCSD Sample Id: 7664423-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.124	123	0.126	126	70-130	2	35	mg/kg	10.18.18 12:26	
Toluene	<0.00202	0.101	0.108	107	0.108	108	70-130	0	35	mg/kg	10.18.18 12:26	
Ethylbenzene	<0.00202	0.101	0.117	116	0.120	120	70-130	3	35	mg/kg	10.18.18 12:26	
m,p-Xylenes	<0.00102	0.202	0.247	122	0.238	118	70-130	4	35	mg/kg	10.18.18 12:26	
o-Xylene	<0.00202	0.101	0.123	122	0.126	126	70-130	2	35	mg/kg	10.18.18 12:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		127		116		70-130	%	10.18.18 12:26
4-Bromofluorobenzene	90		120		121		70-130	%	10.18.18 12:26

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066834

Parent Sample Id: 602569-003

Matrix: Soil

MS Sample Id: 602569-003 S

Prep Method: SW5030B

Date Prep: 10.18.18

MSD Sample Id: 602569-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0845	85	0.0939	94	70-130	11	35	mg/kg	10.18.18 13:09	
Toluene	<0.00200	0.100	0.0751	75	0.0822	82	70-130	9	35	mg/kg	10.18.18 13:09	
Ethylbenzene	<0.00200	0.100	0.0880	88	0.0966	97	70-130	9	35	mg/kg	10.18.18 13:09	
m,p-Xylenes	<0.00400	0.200	0.177	89	0.193	97	70-130	9	35	mg/kg	10.18.18 13:09	
o-Xylene	<0.00200	0.100	0.0868	87	0.0952	95	70-130	9	35	mg/kg	10.18.18 13:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	121		120		70-130	%	10.18.18 13:09
4-Bromofluorobenzene	126		122		70-130	%	10.18.18 13:09

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

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



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 Stafford, Texas (281-240-4200)
 Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 1 of 1

San Antonio, Texas (210-509-3334)
 Midland, Texas (432-704-5251)

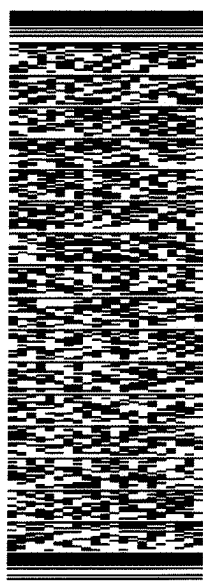
Phoenix, Arizona (480-365-0900)

WWW.XNCO.COM

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: <u>IT Environmental, Inc. Pelina Office</u>				Project Name/Number: <u>012918147</u> <u>State #14</u>											
Company Address: <u>300 N. St. Building Unit 103 Midland, TX 79701</u>				Project Location: <u>Eddy County ARP4967</u>											
Email: <u>ababero@itenv.com</u> (432) 704-5178				Invoice To: <u>XTO: Kyle Littlell</u>											
Project Contact: <u>Adrian Baker</u>				PO Number: <u></u>											
Sampler's Name: <u>Anna Byers</u>															
Field ID / Point of Collection: <u></u>															
No.	Sample Depth	Date	Time	Matrix	# of bottles	CI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments	
1	ES17	3/01	10/15	S	1									TPH by SW8015 Mod	
2	SWID	5/01	10/15	S	1									BTEX by EPA 8021B	
3														Chloride by EPA 300	
4														average depth	
5															
6															
7															
8															
9															
10															
Turnaround Time (Business days)				Data Deliverable Information				Notes:							
☒ Same Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg / raw data)							
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC + Forms				☐ TRRP Level IV			
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411			
☐ 3 Day EMERGENCY				☐ TRRP Checklist											
TAT Starts Day received by Lab, if received by 5:00 pm															
Relinquished by Sampler: <u>Anna Byers</u>				Date Time: <u>10/17/18</u>				Received By: <u>[Signature]</u>				Date Time: <u>10/17/18</u>			
Relinquished by: <u>Anna Byers</u>				Date Time: <u>10/17/18</u>				Received By: <u>[Signature]</u>				Date Time: <u>10/17/18</u>			
Relinquished by: <u></u>				Date Time: <u></u>				Received By: <u></u>				Date Time: <u></u>			
Relinquished by: <u></u>				Date Time: <u></u>				Received By: <u></u>				Date Time: <u></u>			
FED-EX / UPS Tracking # <u>773503924488</u>															
On Ice ☐				Cooler Temp. <u>3.0</u>				Thermo. Corr. Factor <u>1.0</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 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:CAOA (575) 887-6245 XENCO PAC MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 17OCT18 ACTWGT: 56.00 LB CAD: 101813/06INET4040 DIMS: 26x14x14 IN BILL RECIPIENT	
TO HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711 (806) 794-1296 INV/ REF: PO: DEPT:			
TRK# 7735 0392 4628 THU - 18 OCT HOLD STANDARD OVERNIGHT HLD 41 MAFA MAFA TX-US LBB			



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Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/18/2018 10:40:00 AM

Work Order #: 602720

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.2
#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: 10/18/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/18/2018

Analytical Report 602976

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 #1H

012918147

26-OCT-18

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)

Xenco-Lakeland: Florida (E84098)



26-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **602976**

Elk Wallow 11 #1H

Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 602976. 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. 602976 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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**Sample Cross Reference 602976****LT Environmental, Inc., Arvada, CO**

Elk Wallow 11 #1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW11	S	10-18-18 09:35	6 ft	602976-001
SW12	S	10-18-18 11:50	6 ft	602976-002
SW13	S	10-18-18 13:20	6.5 ft	602976-003
FS18	S	10-18-18 10:50	8 ft	602976-004
FS19	S	10-18-18 12:35	9 ft	602976-005
FS20	S	10-18-18 17:00	14 ft	602976-006
FS21	S	10-18-18 13:40	4 ft	602976-007

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Elk Wallow 11 #1H**Project ID: 012918147
Work Order Number(s): 602976Report Date: 26-OCT-18
Date Received: 10/20/2018

Sample receipt non conformances and comments:

PER CLIENTS EMAIL REQUEST, CORRECTED SAMPLE DEPTH FOR SAMPLE 001 FROM 5.5 TO 6. JKR 10/26/18 NEW VERSION GENERATED

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3067221 BTEX by EPA 8021B

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

Lab Sample ID 602976-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 602976-001, -002, -003, -004, -005, -006, -007.

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



Certificate of Analysis Summary 602976

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 #1H



Project Id: 012918147
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Sat Oct-20-18 09:00 am
Report Date: 26-OCT-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	602976-001	602976-002	602976-003	602976-004	602976-005	602976-006
	<i>Field Id:</i>	SW11	SW12	SW13	FS18	FS19	FS20
	<i>Depth:</i>	6- ft	6- ft	6.5- ft	8- ft	9- ft	14- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-18-18 09:35	Oct-18-18 11:50	Oct-18-18 13:20	Oct-18-18 10:50	Oct-18-18 12:35	Oct-18-18 17:00
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-22-18 16:00	Oct-22-18 16:00	Oct-22-18 16:00	Oct-22-18 16:00	Oct-22-18 16:00	Oct-22-18 16:00
	<i>Analyzed:</i>	Oct-23-18 03:05	Oct-23-18 03:25	Oct-23-18 03:45	Oct-23-18 04:05	Oct-23-18 04:25	Oct-23-18 04:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401	<0.00402 0.00402	<0.00404 0.00404	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-22-18 16:00	Oct-22-18 16:00	Oct-22-18 16:00	Oct-22-18 16:00	Oct-22-18 16:00	Oct-22-18 16:00
	<i>Analyzed:</i>	Oct-22-18 19:28	Oct-22-18 19:34	Oct-22-18 19:39	Oct-22-18 19:44	Oct-22-18 19:50	Oct-22-18 19:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		449 4.99	475 4.95	493 4.96	488 4.96	551 5.00	493 4.97
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-22-18 10:00	Oct-22-18 10:00	Oct-22-18 10:00	Oct-22-18 10:00	Oct-22-18 10:00	Oct-22-18 10:00
	<i>Analyzed:</i>	Oct-22-18 15:42	Oct-22-18 16:03	Oct-22-18 17:06	Oct-22-18 17:27	Oct-22-18 17:48	Oct-22-18 18:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 602976

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 #1H

Project Id: 012918147
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Sat Oct-20-18 09:00 am
Report Date: 26-OCT-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 602976-007 Field Id: FS21 Depth: 4- ft Matrix: SOIL Sampled: Oct-18-18 13:40					
BTEX by EPA 8021B	Extracted: Oct-22-18 16:00 Analyzed: Oct-23-18 05:05 Units/RL: mg/kg RL					
Benzene	<0.00202 0.00202					
Toluene	<0.00202 0.00202					
Ethylbenzene	<0.00202 0.00202					
m,p-Xylenes	<0.00403 0.00403					
o-Xylene	<0.00202 0.00202					
Total Xylenes	<0.00202 0.00202					
Total BTEX	<0.00202 0.00202					
Inorganic Anions by EPA 300	Extracted: Oct-22-18 16:30 Analyzed: Oct-22-18 20:43 Units/RL: mg/kg RL					
Chloride	279 4.99					
TPH by SW8015 Mod	Extracted: Oct-22-18 10:00 Analyzed: Oct-22-18 18:30 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<14.9 14.9					
Diesel Range Organics (DRO)	<14.9 14.9					
Motor Oil Range Hydrocarbons (MRO)	<14.9 14.9					
Total TPH	<14.9 14.9					

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Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 602976



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **SW11**
Lab Sample Id: 602976-001

Matrix: Soil
Date Collected: 10.18.18 09.35

Date Received: 10.20.18 09.00
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3067165

Date Prep: 10.22.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	449	4.99	mg/kg	10.22.18 19.28		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3067248

Date Prep: 10.22.18 10.00

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	10.22.18 15.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.22.18 15.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.22.18 15.42	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.22.18 15.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.22.18 15.42	
o-Terphenyl	84-15-1	96	%	70-135	10.22.18 15.42	



Certificate of Analytical Results 602976



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **SW11**
Lab Sample Id: 602976-001

Matrix: Soil
Date Collected: 10.18.18 09.35

Date Received: 10.20.18 09.00
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3067221

Date Prep: 10.22.18 16.00

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	10.23.18 03.05	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.23.18 03.05	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.23.18 03.05	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.23.18 03.05	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.23.18 03.05	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.23.18 03.05	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.23.18 03.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.23.18 03.05		
1,4-Difluorobenzene	540-36-3	113	%	70-130	10.23.18 03.05		



Certificate of Analytical Results 602976

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **SW12** Matrix: Soil Date Received: 10.20.18 09.00
 Lab Sample Id: 602976-002 Date Collected: 10.18.18 11.50 Sample Depth: 6 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.22.18 16.00 Basis: Wet Weight
 Seq Number: 3067165

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	475	4.95	mg/kg	10.22.18 19.34		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.22.18 10.00 Basis: Wet Weight
 Seq Number: 3067248

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.22.18 16.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.22.18 16.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.22.18 16.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.22.18 16.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.22.18 16.03	
o-Terphenyl	84-15-1	93	%	70-135	10.22.18 16.03	



Certificate of Analytical Results 602976



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **SW12**
Lab Sample Id: 602976-002

Matrix: Soil
Date Collected: 10.18.18 11.50

Date Received: 10.20.18 09.00
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.22.18 16.00

Basis: Wet Weight

Seq Number: 3067221

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.23.18 03.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.23.18 03.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.23.18 03.25	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.23.18 03.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.23.18 03.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.23.18 03.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.23.18 03.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.23.18 03.25		
1,4-Difluorobenzene	540-36-3	113	%	70-130	10.23.18 03.25		



Certificate of Analytical Results 602976



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **SW13**
Lab Sample Id: 602976-003

Matrix: Soil
Date Collected: 10.18.18 13.20

Date Received: 10.20.18 09.00
Sample Depth: 6.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3067165

Date Prep: 10.22.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	493	4.96	mg/kg	10.22.18 19.39		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3067248

Date Prep: 10.22.18 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	10.22.18 17.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.22.18 17.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.22.18 17.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.22.18 17.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.22.18 17.06	
o-Terphenyl	84-15-1	88	%	70-135	10.22.18 17.06	



Certificate of Analytical Results 602976

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **SW13**
 Lab Sample Id: 602976-003

Matrix: Soil
 Date Collected: 10.18.18 13.20

Date Received: 10.20.18 09.00
 Sample Depth: 6.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3067221

Date Prep: 10.22.18 16.00

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	10.23.18 03.45	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.23.18 03.45	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.23.18 03.45	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.23.18 03.45	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.23.18 03.45	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.23.18 03.45	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.23.18 03.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	10.23.18 03.45		
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.23.18 03.45		



Certificate of Analytical Results 602976



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **FS18** Matrix: Soil Date Received: 10.20.18 09.00
 Lab Sample Id: 602976-004 Date Collected: 10.18.18 10.50 Sample Depth: 8 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.22.18 16.00 Basis: Wet Weight
 Seq Number: 3067165

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	488	4.96	mg/kg	10.22.18 19.44		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.22.18 10.00 Basis: Wet Weight
 Seq Number: 3067248

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.22.18 17.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.22.18 17.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.22.18 17.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.22.18 17.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.22.18 17.27	
o-Terphenyl	84-15-1	94	%	70-135	10.22.18 17.27	



Certificate of Analytical Results 602976



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **FS18**
Lab Sample Id: 602976-004

Matrix: Soil
Date Collected: 10.18.18 10.50

Date Received: 10.20.18 09.00
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3067221

Date Prep: 10.22.18 16.00

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	10.23.18 04.05	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.23.18 04.05	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.23.18 04.05	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.23.18 04.05	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.23.18 04.05	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.23.18 04.05	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.23.18 04.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	10.23.18 04.05		
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.23.18 04.05		



Certificate of Analytical Results 602976



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **FS19**
Lab Sample Id: 602976-005

Matrix: Soil
Date Collected: 10.18.18 12.35

Date Received: 10.20.18 09.00
Sample Depth: 9 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3067165

Date Prep: 10.22.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	551	5.00	mg/kg	10.22.18 19.50		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3067248

Date Prep: 10.22.18 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	10.22.18 17.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.22.18 17.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.22.18 17.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.22.18 17.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.22.18 17.48	
o-Terphenyl	84-15-1	93	%	70-135	10.22.18 17.48	



Certificate of Analytical Results 602976

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **FS19**
 Lab Sample Id: 602976-005

Matrix: Soil
 Date Collected: 10.18.18 12.35

Date Received: 10.20.18 09.00
 Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3067221

Date Prep: 10.22.18 16.00

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	10.23.18 04.25	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.23.18 04.25	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.23.18 04.25	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.23.18 04.25	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.23.18 04.25	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.23.18 04.25	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.23.18 04.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	10.23.18 04.25		
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.23.18 04.25		



Certificate of Analytical Results 602976

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **FS20** Matrix: Soil Date Received: 10.20.18 09.00
 Lab Sample Id: 602976-006 Date Collected: 10.18.18 17.00 Sample Depth: 14 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.22.18 16.00 Basis: Wet Weight
 Seq Number: 3067165

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	493	4.97	mg/kg	10.22.18 19.55		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.22.18 10.00 Basis: Wet Weight
 Seq Number: 3067248

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.22.18 18.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.22.18 18.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.22.18 18.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.22.18 18.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.22.18 18.09	
o-Terphenyl	84-15-1	93	%	70-135	10.22.18 18.09	



Certificate of Analytical Results 602976

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **FS20**
 Lab Sample Id: 602976-006

Matrix: Soil
 Date Collected: 10.18.18 17.00

Date Received: 10.20.18 09.00
 Sample Depth: 14 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3067221

Date Prep: 10.22.18 16.00

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	10.23.18 04.45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.23.18 04.45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.23.18 04.45	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.23.18 04.45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.23.18 04.45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.23.18 04.45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.23.18 04.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	10.23.18 04.45		
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.23.18 04.45		



Certificate of Analytical Results 602976



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **FS21** Matrix: Soil Date Received: 10.20.18 09.00
 Lab Sample Id: 602976-007 Date Collected: 10.18.18 13.40 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.22.18 16.30 Basis: Wet Weight
 Seq Number: 3067168

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	279	4.99	mg/kg	10.22.18 20.43		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.22.18 10.00 Basis: Wet Weight
 Seq Number: 3067248

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.22.18 18.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.22.18 18.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.22.18 18.30	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.22.18 18.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.22.18 18.30	
o-Terphenyl	84-15-1	85	%	70-135	10.22.18 18.30	



Certificate of Analytical Results 602976



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 #1H

Sample Id: **FS21**
Lab Sample Id: 602976-007

Matrix: Soil
Date Collected: 10.18.18 13.40

Date Received: 10.20.18 09.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3067221

Date Prep: 10.22.18 16.00

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	10.23.18 05.05	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.23.18 05.05	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.23.18 05.05	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.23.18 05.05	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.23.18 05.05	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.23.18 05.05	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.23.18 05.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	10.23.18 05.05		
1,4-Difluorobenzene	540-36-3	111	%	70-130	10.23.18 05.05		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 #1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067165

MB Sample Id: 7664626-1-BLK

Matrix: Solid

LCS Sample Id: 7664626-1-BKS

Prep Method: E300P

Date Prep: 10.22.18

LCSD Sample Id: 7664626-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	261	104	260	104	90-110	0	20	mg/kg	10.22.18 17:21	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067168

MB Sample Id: 7664627-1-BLK

Matrix: Solid

LCS Sample Id: 7664627-1-BKS

Prep Method: E300P

Date Prep: 10.22.18

LCSD Sample Id: 7664627-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	262	105	261	104	90-110	0	20	mg/kg	10.22.18 20:16	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067165

Parent Sample Id: 602974-001

Matrix: Soil

MS Sample Id: 602974-001 S

Prep Method: E300P

Date Prep: 10.22.18

MSD Sample Id: 602974-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	592	248	831	96	831	96	90-110	0	20	mg/kg	10.22.18 17:37	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067165

Parent Sample Id: 602974-011

Matrix: Soil

MS Sample Id: 602974-011 S

Prep Method: E300P

Date Prep: 10.22.18

MSD Sample Id: 602974-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.73	250	267	106	267	106	90-110	0	20	mg/kg	10.22.18 18:51	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067168

Parent Sample Id: 602870-021

Matrix: Soil

MS Sample Id: 602870-021 S

Prep Method: E300P

Date Prep: 10.22.18

MSD Sample Id: 602870-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.5	251	300	107	298	106	90-110	1	20	mg/kg	10.22.18 20:32	

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 #1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067168

Parent Sample Id: 602870-022

Matrix: Soil

MS Sample Id: 602870-022 S

Prep Method: E300P

Date Prep: 10.22.18

MSD Sample Id: 602870-022 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.0	250	292	106	292	106	90-110	0	20	mg/kg	10.22.18 21:46	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3067248

MB Sample Id: 7664678-1-BLK

Matrix: Solid

LCS Sample Id: 7664678-1-BKS

Prep Method: TX1005P

Date Prep: 10.22.18

LCSD Sample Id: 7664678-1-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	946	95	977	98	70-135	3	20	mg/kg	10.22.18 11:35	
Diesel Range Organics (DRO)	<8.13	1000	957	96	1010	101	70-135	5	20	mg/kg	10.22.18 11:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		128		117		70-135	%	10.22.18 11:35
o-Terphenyl	104		105		109		70-135	%	10.22.18 11:35

Analytical Method: TPH by SW8015 Mod

Seq Number: 3067248

Parent Sample Id: 602878-001

Matrix: Soil

MS Sample Id: 602878-001 S

Prep Method: TX1005P

Date Prep: 10.22.18

MSD Sample Id: 602878-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	927	93	942	94	70-135	2	20	mg/kg	10.22.18 12:36	
Diesel Range Organics (DRO)	<8.12	999	988	99	1010	101	70-135	2	20	mg/kg	10.22.18 12:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		124		70-135	%	10.22.18 12:36
o-Terphenyl	99		94		70-135	%	10.22.18 12:36

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 #1H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3067221

MB Sample Id: 7664675-1-BLK

Matrix: Solid

LCS Sample Id: 7664675-1-BKS

Prep Method: SW5030B

Date Prep: 10.22.18

LCSD Sample Id: 7664675-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.113	113	0.116	115	70-130	3	35	mg/kg	10.23.18 01:05	
Toluene	<0.00201	0.100	0.105	105	0.108	107	70-130	3	35	mg/kg	10.23.18 01:05	
Ethylbenzene	<0.00201	0.100	0.104	104	0.0964	95	70-130	8	35	mg/kg	10.23.18 01:05	
m,p-Xylenes	<0.00402	0.201	0.187	93	0.182	90	70-130	3	35	mg/kg	10.23.18 01:05	
o-Xylene	<0.00201	0.100	0.0840	84	0.0977	97	70-130	15	35	mg/kg	10.23.18 01:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		89		93		70-130	%	10.23.18 01:05
4-Bromofluorobenzene	79		71		83		70-130	%	10.23.18 01:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3067221

Parent Sample Id: 602976-001

Matrix: Soil

MS Sample Id: 602976-001 S

Prep Method: SW5030B

Date Prep: 10.22.18

MSD Sample Id: 602976-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.102	102	0.0910	91	70-130	11	35	mg/kg	10.23.18 01:45	
Toluene	<0.00199	0.0996	0.0911	91	0.0802	80	70-130	13	35	mg/kg	10.23.18 01:45	
Ethylbenzene	<0.00199	0.0996	0.0773	78	0.0674	67	70-130	14	35	mg/kg	10.23.18 01:45	X
m,p-Xylenes	<0.00398	0.199	0.146	73	0.128	64	70-130	13	35	mg/kg	10.23.18 01:45	X
o-Xylene	<0.00199	0.0996	0.0703	71	0.0617	62	70-130	13	35	mg/kg	10.23.18 01:45	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		95		70-130	%	10.23.18 01:45
4-Bromofluorobenzene	80		78		70-130	%	10.23.18 01:45

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

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

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

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



Setting the Standard since 1990
 Stafford, Texas (281-240-4200)
 Dallas Texas (214-902-0300)

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Page 1 of 1

San Antonio, Texas (210-608-3334)
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-366-0900)

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Client / Reporting Information				Project Information				Analytical Information				Matrix Codes		
Company Name / Branch: <u>Environmental, Inc. Pelina Office</u>				Project Name/Number: <u>Elk Meadow II #11H</u>										
Company Address: <u>3300 W 8th St. Building 1 Unit 103 Midland, TX 79702</u>				Project Location: <u>22P4967</u>										
Email: <u>ababero@elenv.com (432) 704-5178</u>				Invoice To: <u>XTO: Kyle Little</u>										
Project Contact: <u>Adrian Baker</u>				PO Number:										
Sampler's Name: <u>Anna Byers</u>														
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	SW11	5.5'	10/18	09:35	S	1								one depth
2	SW12	6'		11:50	S	1								one depth
3	SW13	6.5'		13:30	S	1								one depth
4	FS18	8'		10:50	S	1								one depth
5	FS19	9'		12:35	S	1								one depth
6	FS20	14'		13:00	S	1								one depth
7	FS21	4'		13:40	S	1								average depth
8														
9														
10														
Turnaround Time (Business days)				Data Deliverable Information				Notes:						
☒ Same Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg / raw data)						
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV		
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411		
☐ 3 Day EMERGENCY								☐ TRRP Checklist						
TAT Starts Day received by Lab, if received by 5:00 pm														
Relinquished by Sampler: <u>Anna Byers</u>				Date Time: <u>10/19/18</u>				Received By: <u>[Signature]</u>				Date Time: <u>10/19/18</u>		
Relinquished by: <u>Anna Byers</u>				Date Time: <u>10/19/18</u>				Received By: <u>[Signature]</u>				Date Time: <u>10/19/18</u>		
Relinquished by: <u>[Signature]</u>				Date Time: <u>10/19/18</u>				Received By: <u>[Signature]</u>				Date Time: <u>10/19/18</u>		
Custody Seal #				Preserved when applicable				Batch				Coddler Temp.		
FED-EX / UPS: Tracking # <u>773545048770</u>														

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco 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 Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID: CACA (575) 887-6245		SHIP DATE: 19OCT18	
XENCO SATURDAY		ACTWGT: 08.00 LB	
PAC N MAIL		CND: 101813106NET/4040	
910 W PIERCE ST		DIMS: 26x14x15 IN	
CARLSBAD, NM 88220		BILL RECIPIENT	
UNITED STATES US			
TO HOLD FOR XENCO			
FEDEX OFFICE PRINT & SHIP CENTER			
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200 W INTERSTATE 20			
MIDLAND TX 79701			
(805) 674-0639		REF: XENCO	
INV:		DEPT:	
PO:			

TRK# 7735 2502 8770	SATURDAY HOLD
0201	PRIORITY OVERNIGHT
41 MAFA	HLD
TX-US	MAFKI
	LBB



552J11/88FB/DCA5

After printing this label:

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Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/20/2018 09:00:00 AM

Work Order #: 602976

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 10/22/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/22/2018

Analytical Report 603125

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State 1H

012918147

24-OCT-18

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)

Xenco-Lakeland: Florida (E84098)



24-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **603125**

Elk Wallow 11 State 1H

Project Address: 2RP4967 Eddy County

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) 603125. 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. 603125 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

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Sample Cross Reference 603125

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW14	S	10-19-18 11:55	8 ft	603125-001
SW15	S	10-19-18 12:00	8 ft	603125-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow 11 State 1H

Project ID: 012918147
Work Order Number(s): 603125

Report Date: 24-OCT-18
Date Received: 10/23/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3067371 BTEX by EPA 8021B

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



Certificate of Analysis Summary 603125

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State 1H



Project Id: 012918147
Contact: Adrian Baker
Project Location: 2RP4967 Eddy County

Date Received in Lab: Tue Oct-23-18 10:00 am
Report Date: 24-OCT-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	603125-001	603125-002				
	Field Id:	SW14	SW15				
	Depth:	8- ft	8- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Oct-19-18 11:55	Oct-19-18 12:00				
BTEX by EPA 8021B	Extracted:	Oct-23-18 16:00	Oct-23-18 16:00				
	Analyzed:	Oct-24-18 03:15	Oct-24-18 03:37				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00200 0.00200	<0.00200 0.00200				
Toluene		<0.00200 0.00200	<0.00200 0.00200				
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200				
m,p-Xylenes		<0.00401 0.00401	<0.00399 0.00399				
o-Xylene		<0.00200 0.00200	<0.00200 0.00200				
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200				
Total BTEX		<0.00200 0.00200	<0.00200 0.00200				
Inorganic Anions by EPA 300	Extracted:	Oct-23-18 12:00	Oct-23-18 12:00				
	Analyzed:	Oct-23-18 20:22	Oct-23-18 20:27				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		774 25.0	430 5.00				
TPH by SW8015 Mod	Extracted:	Oct-23-18 12:00	Oct-23-18 12:00				
	Analyzed:	Oct-23-18 19:04	Oct-23-18 19:23				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				

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 - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 603125



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW14** Matrix: Soil Date Received: 10.23.18 10.00
 Lab Sample Id: 603125-001 Date Collected: 10.19.18 11.55 Sample Depth: 8 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.23.18 12.00 Basis: Wet Weight
 Seq Number: 3067303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	774	25.0	mg/kg	10.23.18 20.22		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.23.18 12.00 Basis: Wet Weight
 Seq Number: 3067317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.23.18 19.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.23.18 19.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.23.18 19.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.23.18 19.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.23.18 19.04	
o-Terphenyl	84-15-1	95	%	70-135	10.23.18 19.04	



Certificate of Analytical Results 603125



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW14**
Lab Sample Id: 603125-001

Matrix: Soil
Date Collected: 10.19.18 11.55

Date Received: 10.23.18 10.00
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3067371

Date Prep: 10.23.18 16.00

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	10.24.18 03.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.24.18 03.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.24.18 03.15	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.24.18 03.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.24.18 03.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.24.18 03.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.24.18 03.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	10.24.18 03.15		
1,4-Difluorobenzene	540-36-3	114	%	70-130	10.24.18 03.15		



Certificate of Analytical Results 603125



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW15**
Lab Sample Id: 603125-002

Matrix: Soil
Date Collected: 10.19.18 12.00

Date Received: 10.23.18 10.00
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3067303

Date Prep: 10.23.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	430	5.00	mg/kg	10.23.18 20.27		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3067317

Date Prep: 10.23.18 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.23.18 19.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.23.18 19.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.23.18 19.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.23.18 19.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	92	%	70-135	10.23.18 19.23		
o-Terphenyl	84-15-1	94	%	70-135	10.23.18 19.23		



Certificate of Analytical Results 603125

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW15**
 Lab Sample Id: 603125-002

Matrix: Soil
 Date Collected: 10.19.18 12.00

Date Received: 10.23.18 10.00
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.23.18 16.00

Basis: Wet Weight

Seq Number: 3067371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.24.18 03.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.24.18 03.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.24.18 03.37	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.24.18 03.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.24.18 03.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.24.18 03.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.24.18 03.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	10.24.18 03.37		
1,4-Difluorobenzene	540-36-3	116	%	70-130	10.24.18 03.37		



Flagging Criteria



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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067303

MB Sample Id: 7664664-1-BLK

Matrix: Solid

LCS Sample Id: 7664664-1-BKS

Prep Method: E300P

Date Prep: 10.23.18

LCSD Sample Id: 7664664-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	262	105	263	105	90-110	0	20	mg/kg	10.23.18 17:58	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067303

Parent Sample Id: 603051-001

Matrix: Soil

MS Sample Id: 603051-001 S

Prep Method: E300P

Date Prep: 10.23.18

MSD Sample Id: 603051-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.853	249	264	106	267	107	90-110	1	20	mg/kg	10.23.18 18:14	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067303

Parent Sample Id: 603082-006

Matrix: Soil

MS Sample Id: 603082-006 S

Prep Method: E300P

Date Prep: 10.23.18

MSD Sample Id: 603082-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.852	248	246	99	246	99	90-110	0	20	mg/kg	10.23.18 19:29	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3067317

MB Sample Id: 7664709-1-BLK

Matrix: Solid

LCS Sample Id: 7664709-1-BKS

Prep Method: TX1005P

Date Prep: 10.23.18

LCSD Sample Id: 7664709-1-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	1030	103	938	94	70-135	9	20	mg/kg	10.23.18 11:20	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	1040	104	70-135	4	20	mg/kg	10.23.18 11:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		127		123		70-135	%	10.23.18 11:20
o-Terphenyl	96		103		97		70-135	%	10.23.18 11:20

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3067317

Parent Sample Id: 603112-003

Matrix: Soil

MS Sample Id: 603112-003 S

Prep Method: TX1005P

Date Prep: 10.23.18

MSD Sample Id: 603112-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	996	100	958	96	70-135	4	20	mg/kg	10.23.18 12:55	
Diesel Range Organics (DRO)	12.0	998	1040	103	1040	103	70-135	0	20	mg/kg	10.23.18 12:55	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		122		70-135	%	10.23.18 12:55
o-Terphenyl	120		120		70-135	%	10.23.18 12:55

Analytical Method: BTEX by EPA 8021B

Seq Number: 3067371

MB Sample Id: 7664751-1-BLK

Matrix: Solid

LCS Sample Id: 7664751-1-BKS

Prep Method: SW5030B

Date Prep: 10.23.18

LCSD Sample Id: 7664751-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.115	114	0.123	123	70-130	7	35	mg/kg	10.23.18 13:43	
Toluene	<0.00201	0.101	0.0978	97	0.107	107	70-130	9	35	mg/kg	10.23.18 13:43	
Ethylbenzene	<0.00201	0.101	0.117	116	0.129	129	70-130	10	35	mg/kg	10.23.18 13:43	
m,p-Xylenes	<0.00102	0.201	0.234	116	0.255	127	70-130	9	35	mg/kg	10.23.18 13:43	
o-Xylene	<0.00201	0.101	0.110	109	0.120	120	70-130	9	35	mg/kg	10.23.18 13:43	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		103		111		70-130	%	10.23.18 13:43
4-Bromofluorobenzene	108		115		113		70-130	%	10.23.18 13:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3067371

Parent Sample Id: 603125-001

Matrix: Soil

MS Sample Id: 603125-001 S

Prep Method: SW5030B

Date Prep: 10.23.18

MSD Sample Id: 603125-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0908	91	0.0871	87	70-130	4	35	mg/kg	10.24.18 01:49	
Toluene	<0.00199	0.0994	0.0764	77	0.0730	73	70-130	5	35	mg/kg	10.24.18 01:49	
Ethylbenzene	<0.00199	0.0994	0.0841	85	0.0797	80	70-130	5	35	mg/kg	10.24.18 01:49	
m,p-Xylenes	<0.00398	0.199	0.171	86	0.159	80	70-130	7	35	mg/kg	10.24.18 01:49	
o-Xylene	<0.00199	0.0994	0.0844	85	0.0779	78	70-130	8	35	mg/kg	10.24.18 01:49	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	118		102		70-130	%	10.24.18 01:49
4-Bromofluorobenzene	106		99		70-130	%	10.24.18 01:49

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



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

**San Antonio, Texas (210-509-3334,
Midland, Texas (432-704-5251))**

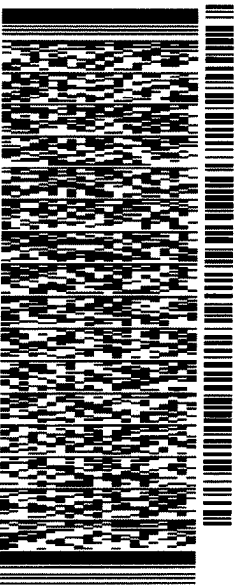
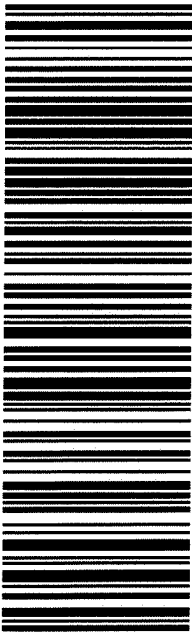
Phoenix, Arizona (480-355-0800)

CHAIN OF C STUDY

Page 1 of 1

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes											
Company Name / Branch: <u>IT Environmental, Inc.</u> <u>Pelican Office</u>		Project Name/Number: <u>Elk Valley 11 State 1H</u>		Invoice To: <u>XTO: Kyle Littlell</u>		IW = Water S = Soil/Sed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water A = Air											
Company Address: <u>300 W 1st St. Building Unit 103</u> <u>Midway, TX 75270</u>		Project Location: <u>2004967</u> <u>Eddy County</u>		PO Number: <u>012918147</u>													
Email: <u>adrian@itenv.com</u> <u>(432) 704-5178</u>		Phone No: <u>75270</u>															
Project Contact: <u>Adrian Baker</u>																	
Sampler's Name: <u>Anna Byers</u>																	
No. _____		Field ID / Point of Collection _____															
1 <u>SWH</u>		Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Field Comments		
2 <u>SW15</u>		8'	10/9	1155	S	1									average depth		
3		8'	10/9	1200	S	1									average depth		
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Turnaround Time (Business days) _____		Data Deliverable Information		Notes:													
☒ Same Day TAT		☐ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg /raw data)											
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC- Forms		☐ TRRP Level IV											
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG -411											
☐ 3 Day EMERGENCY				☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm																	
Relinquished by Sampler: <u>Anna Byers</u>		Date Time: <u>10/19/18</u>		Received By: <u>[Signature]</u>		Relinquished By: <u>[Signature]</u>		Date Time: <u>10/22/19 15:30</u>		Received By: <u>[Signature]</u>		Relinquished By: <u>[Signature]</u>		Date Time: <u>10/23/18</u>		Received By: <u>[Signature]</u>	
Relinquished by: _____		Date Time: _____		Received By: _____		Relinquished By: _____		Date Time: _____		Received By: _____		Relinquished By: _____		Date Time: _____		Received By: _____	
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Relinquished by: _____		Date Time: _____		Received By: _____</													

Notwithstanding the above, the Client understands and acknowledges that the purchase of this document and relinquishment of samples constitutes a valid purchase order from client company to Xeno, its affiliates and subcontractors. If assigns standard terms and conditions of service, Xeno 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 Xeno. A minimum charge of \$75 will be applied to each project. Xeno's liability will be limited to the cost of samples. Any samples received by Xeno but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:CAOA (575) 887-6245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 22OCT18 ACTWGT: 34.00 LB CAD: 101813706/NET4040 DIMS: 18X12X13 IN BILL RECIPIENT	
TO HOLD FOR XENCO FEDEx EXPRESS SHIP CENTER FEDEx SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711			
(800) 794-1296 INV. REF:		DEPT:	
PO:			
			
			
J122118081501ur			
TRK# 7735 3747 7085 0201		TUE - 23 OCT HOLD STANDARD OVERNIGHT HLD MAFA TX-US LBB	
			

552J1188FB/DCA5

After printing this label:

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

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Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/23/2018 10:22:33 AM

Work Order #: 603125

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 10/23/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/23/2018

Analytical Report 603126

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State 1H

012918147

24-OCT-18

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)

Xenco-Lakeland: Florida (E84098)



24-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **603126**

Elk Wallow 11 State 1H

Project Address: 2RP4967 Eddy County

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) 603126. 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. 603126 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

**Sample Cross Reference 603126****LT Environmental, Inc., Arvada, CO**

Elk Wallow 11 State 1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS15	S	10-12-18 15:15	5 ft	603126-001
FS16	S	10-12-18 15:25	5 ft	603126-002
SW09	S	10-12-18 15:45	2 ft	603126-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow 11 State 1H

Project ID: 012918147

Work Order Number(s): 603126

Report Date: 24-OCT-18

Date Received: 10/23/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3067371 BTEX by EPA 8021B

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



Certificate of Analysis Summary 603126

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State 1H



Project Id: 012918147
Contact: Adrian Baker
Project Location: 2RP4967 Eddy County

Date Received in Lab: Tue Oct-23-18 10:00 am
Report Date: 24-OCT-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	603126-001	603126-002	603126-003			
	<i>Field Id:</i>	FS15	FS16	SW09			
	<i>Depth:</i>	5- ft	5- ft	2- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Oct-12-18 15:15	Oct-12-18 15:25	Oct-12-18 15:45			
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-23-18 16:00	Oct-23-18 16:00	Oct-23-18 16:00			
	<i>Analyzed:</i>	Oct-24-18 03:59	Oct-24-18 04:20	Oct-24-18 04:41			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202			
Toluene		<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202			
Ethylbenzene		<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202			
m,p-Xylenes		<0.00397 0.00397	<0.00396 0.00396	<0.00403 0.00403			
o-Xylene		<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202			
Total Xylenes		<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202			
Total BTEX		<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202			
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-23-18 12:00	Oct-23-18 13:30	Oct-23-18 13:30			
	<i>Analyzed:</i>	Oct-23-18 20:32	Oct-23-18 22:39	Oct-23-18 22:55			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		288 5.02	299 4.95	197 4.95			
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-23-18 17:00	Oct-23-18 17:00	Oct-23-18 17:00			
	<i>Analyzed:</i>	Oct-24-18 01:00	Oct-24-18 01:20	Oct-24-18 01:40			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<14.9 14.9	<15.0 15.0			
Diesel Range Organics (DRO)		<14.9 14.9	<14.9 14.9	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<14.9 14.9	<15.0 15.0			
Total TPH		<14.9 14.9	<14.9 14.9	<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 - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 603126

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS15** Matrix: Soil Date Received: 10.23.18 10.00
 Lab Sample Id: 603126-001 Date Collected: 10.12.18 15.15 Sample Depth: 5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.23.18 12.00 Basis: Wet Weight
 Seq Number: 3067303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	288	5.02	mg/kg	10.23.18 20.32		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.23.18 17.00 Basis: Wet Weight
 Seq Number: 3067316

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.24.18 01.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.24.18 01.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.24.18 01.00	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.24.18 01.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.24.18 01.00	
o-Terphenyl	84-15-1	93	%	70-135	10.24.18 01.00	



Certificate of Analytical Results 603126



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS15**
Lab Sample Id: 603126-001

Matrix: Soil
Date Collected: 10.12.18 15.15

Date Received: 10.23.18 10.00
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.23.18 16.00

Basis: Wet Weight

Seq Number: 3067371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.24.18 03.59	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.24.18 03.59	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.24.18 03.59	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.24.18 03.59	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.24.18 03.59	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.24.18 03.59	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.24.18 03.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	10.24.18 03.59		
1,4-Difluorobenzene	540-36-3	117	%	70-130	10.24.18 03.59		



Certificate of Analytical Results 603126

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS16** Matrix: Soil Date Received: 10.23.18 10.00
 Lab Sample Id: 603126-002 Date Collected: 10.12.18 15.25 Sample Depth: 5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.23.18 13.30 Basis: Wet Weight
 Seq Number: 3067307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	299	4.95	mg/kg	10.23.18 22.39		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.23.18 17.00 Basis: Wet Weight
 Seq Number: 3067316

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.24.18 01.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.24.18 01.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.24.18 01.20	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.24.18 01.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.24.18 01.20	
o-Terphenyl	84-15-1	93	%	70-135	10.24.18 01.20	



Certificate of Analytical Results 603126

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **FS16**
 Lab Sample Id: 603126-002

Matrix: Soil
 Date Collected: 10.12.18 15.25

Date Received: 10.23.18 10.00
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3067371

Date Prep: 10.23.18 16.00

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	10.24.18 04.20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.24.18 04.20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.24.18 04.20	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.24.18 04.20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.24.18 04.20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.24.18 04.20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.24.18 04.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	10.24.18 04.20		
1,4-Difluorobenzene	540-36-3	119	%	70-130	10.24.18 04.20		



Certificate of Analytical Results 603126



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW09**
Lab Sample Id: 603126-003

Matrix: Soil
Date Collected: 10.12.18 15.45

Date Received: 10.23.18 10.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3067307

Date Prep: 10.23.18 13.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	197	4.95	mg/kg	10.23.18 22.55		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3067316

Date Prep: 10.23.18 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	10.24.18 01.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.24.18 01.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.24.18 01.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.24.18 01.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	10.24.18 01.40	
o-Terphenyl	84-15-1	86	%	70-135	10.24.18 01.40	



Certificate of Analytical Results 603126

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State 1H

Sample Id: **SW09**
 Lab Sample Id: 603126-003

Matrix: Soil
 Date Collected: 10.12.18 15.45

Date Received: 10.23.18 10.00
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.23.18 16.00

Basis: Wet Weight

Seq Number: 3067371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.24.18 04.41	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.24.18 04.41	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.24.18 04.41	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.24.18 04.41	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.24.18 04.41	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.24.18 04.41	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.24.18 04.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	10.24.18 04.41		
1,4-Difluorobenzene	540-36-3	121	%	70-130	10.24.18 04.41		



Flagging Criteria



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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067303

MB Sample Id: 7664664-1-BLK

Matrix: Solid

LCS Sample Id: 7664664-1-BKS

Prep Method: E300P

Date Prep: 10.23.18

LCSD Sample Id: 7664664-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	262	105	263	105	90-110	0	20	mg/kg	10.23.18 17:58	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067307

MB Sample Id: 7664685-1-BLK

Matrix: Solid

LCS Sample Id: 7664685-1-BKS

Prep Method: E300P

Date Prep: 10.23.18

LCSD Sample Id: 7664685-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	263	105	261	104	90-110	1	20	mg/kg	10.23.18 20:53	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067303

Parent Sample Id: 603051-001

Matrix: Soil

MS Sample Id: 603051-001 S

Prep Method: E300P

Date Prep: 10.23.18

MSD Sample Id: 603051-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.853	249	264	106	267	107	90-110	1	20	mg/kg	10.23.18 18:14	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067303

Parent Sample Id: 603082-006

Matrix: Soil

MS Sample Id: 603082-006 S

Prep Method: E300P

Date Prep: 10.23.18

MSD Sample Id: 603082-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.852	248	246	99	246	99	90-110	0	20	mg/kg	10.23.18 19:29	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067307

Parent Sample Id: 603124-001

Matrix: Soil

MS Sample Id: 603124-001 S

Prep Method: E300P

Date Prep: 10.23.18

MSD Sample Id: 603124-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.857	250	250	100	250	100	90-110	0	20	mg/kg	10.23.18 21:09	

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3067307

Parent Sample Id: 603124-011

Matrix: Soil

MS Sample Id: 603124-011 S

Prep Method: E300P

Date Prep: 10.23.18

MSD Sample Id: 603124-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.855	249	251	101	250	100	90-110	0	20	mg/kg	10.23.18 22:24	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3067316

MB Sample Id: 7664708-1-BLK

Matrix: Solid

LCS Sample Id: 7664708-1-BKS

Prep Method: TX1005P

Date Prep: 10.23.18

LCSD Sample Id: 7664708-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1100	110	1040	104	70-135	6	20	mg/kg	10.23.18 18:54	
Diesel Range Organics (DRO)	<8.13	1000	1120	112	1050	105	70-135	6	20	mg/kg	10.23.18 18:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		122		120		70-135	%	10.23.18 18:54
o-Terphenyl	97		113		104		70-135	%	10.23.18 18:54

Analytical Method: TPH by SW8015 Mod

Seq Number: 3067316

Parent Sample Id: 603124-001

Matrix: Soil

MS Sample Id: 603124-001 S

Prep Method: TX1005P

Date Prep: 10.23.18

MSD Sample Id: 603124-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	971	97	986	99	70-135	2	20	mg/kg	10.23.18 19:55	
Diesel Range Organics (DRO)	<8.12	999	980	98	992	99	70-135	1	20	mg/kg	10.23.18 19:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		111		70-135	%	10.23.18 19:55
o-Terphenyl	104		98		70-135	%	10.23.18 19:55

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State 1H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3067371

MB Sample Id: 7664751-1-BLK

Matrix: Solid

LCS Sample Id: 7664751-1-BKS

Prep Method: SW5030B

Date Prep: 10.23.18

LCSD Sample Id: 7664751-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.115	114	0.123	123	70-130	7	35	mg/kg	10.23.18 13:43	
Toluene	<0.00201	0.101	0.0978	97	0.107	107	70-130	9	35	mg/kg	10.23.18 13:43	
Ethylbenzene	<0.00201	0.101	0.117	116	0.129	129	70-130	10	35	mg/kg	10.23.18 13:43	
m,p-Xylenes	<0.00102	0.201	0.234	116	0.255	127	70-130	9	35	mg/kg	10.23.18 13:43	
o-Xylene	<0.00201	0.101	0.110	109	0.120	120	70-130	9	35	mg/kg	10.23.18 13:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		103		111		70-130	%	10.23.18 13:43
4-Bromofluorobenzene	108		115		113		70-130	%	10.23.18 13:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3067371

Parent Sample Id: 603125-001

Matrix: Soil

MS Sample Id: 603125-001 S

Prep Method: SW5030B

Date Prep: 10.23.18

MSD Sample Id: 603125-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0908	91	0.0871	87	70-130	4	35	mg/kg	10.24.18 01:49	
Toluene	<0.00199	0.0994	0.0764	77	0.0730	73	70-130	5	35	mg/kg	10.24.18 01:49	
Ethylbenzene	<0.00199	0.0994	0.0841	85	0.0797	80	70-130	5	35	mg/kg	10.24.18 01:49	
m,p-Xylenes	<0.00398	0.199	0.171	86	0.159	80	70-130	7	35	mg/kg	10.24.18 01:49	
o-Xylene	<0.00199	0.0994	0.0844	85	0.0779	78	70-130	8	35	mg/kg	10.24.18 01:49	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	118		102		70-130	%	10.24.18 01:49
4-Bromofluorobenzene	106		99		70-130	%	10.24.18 01:49

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



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

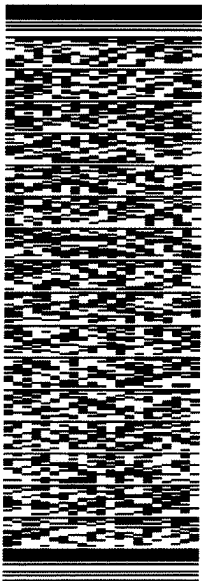
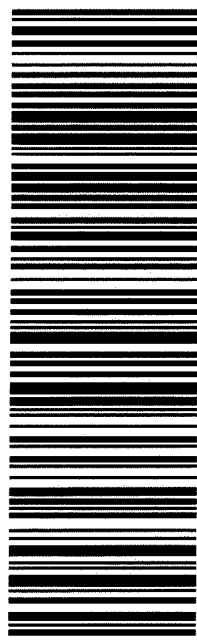
San Antonio, Texas (210-508-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

CHAIN OF C STUDY

Page 1 of 1

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes																																																																																																																																														
Company Name / Branch: <u>IT Services, etc., Inc.</u> <u>Pelican Office</u> Company Address: <u>3300 N 1st St. Building Unit 103</u> <u>Mt. Pleasant, MO 64578</u> Email: <u>adrian.baker@it-services.com</u> <u>(432) 704-5178</u> Project Contact: <u>Adrian Baker</u>		Project Name/Number: <u>09A18147</u> Project Location: <u>Elk Valley II State 1H</u> Invoice To: <u>XTO: QR84967 Eddy County</u> PO Number: <u>XTO: Kyle Littlell</u>				W = Water S = Soil/Sediment GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water A = Air																																																																																																																																														
Sampler's Name: <u>Anna Rogers</u> No. _____ Field ID / Point of Collection _____		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Depth</th> <th>Date</th> <th>Time</th> <th>Matrix</th> <th># of bottles</th> <th>HCl</th> <th>NaOH/Zn Acetate</th> <th>HNO3</th> <th>H2SO4</th> <th>NaOH</th> <th>NaHSO4</th> <th>MeOH</th> <th>NONE</th> </tr> </thead> <tbody> <tr><td>1</td><td>ES15</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2</td><td>FS16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td>SWD9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>		Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	1	ES15												2	FS16												3	SWD9												4													5													6													7													8													9													10													BTEX (only BTEX) 8021 TPH (DRO GRO MRO) 8015 chloride (300.00)	
Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE																																																																																																																																								
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Turnaround Time (Business days) _____ ☒ Same Day TAT ☐ 5 Day TAT ☐ Next Day EMERGENCY ☐ 7 Day TAT ☐ 2 Day EMERGENCY ☐ Contract TAT ☐ 3 Day EMERGENCY ☐ TRRP Checklist		Data Deliverable Information ☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data) ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐ Level 3 (CLP Forms) ☐ UST / RG 411		Notes: _____		FED-EX / UPS: Tracking # <u>773837477085</u>																																																																																																																																														
Relinquished by Sampler: <u>Anna Rogers</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u>		Date Time: <u>10/22/18</u> Date Time: <u>10/22/18</u> Date Time: <u>10/22/18</u> Date Time: <u>10/22/18</u>		Received By: <u>[Signature]</u> Received By: <u>[Signature]</u> Received By: <u>[Signature]</u> Received By: <u>[Signature]</u>		On Ice ☒ Cooler Temp. <u>0.3</u> Thermo. Corr. Factor <u>0.0</u>																																																																																																																																														
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. The client company and Xenco agree that the client company will be responsible for the cost of the sample collection and analysis.																																																																																																																																																				

ORIGIN ID:CAOA (575) 887-6245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 22OCT18 ACTWGT: 34.00 LB CAD: 101813706IN/ET 4040 DIMS: 18x12x15 IN BILL RECIPIENT	
TO HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711 (806) 794-1236 NY: REF: PO: DEPT:			
 			
TRK# 7735 3747 7085 0201		TUE - 23 OCT HOLD STANDARD OVERNIGHT HLD MAFA TX-US LBB	
			

552J188FB/DCA5

After printing this label:

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

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



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/23/2018 10:00:00 AM

Work Order #: 603126

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 10/23/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/23/2018

Analytical Report 619567

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State #1

08-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)



08-APR-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **619567**

Elk Wallow 11 State #1

Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 619567. 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. 619567 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Kalei Stout'.

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.

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



Sample Cross Reference 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	03-27-19 11:30	.5 ft	619567-001
BH01A	S	03-27-19 11:35	1 ft	619567-002
BH02	S	03-27-19 11:45	.5 ft	619567-003
BH0A	S	03-27-19 11:50	1 ft	619567-004
BH03	S	03-27-19 12:00	.5 ft	619567-005
BH03A	S	03-27-19 12:10	1 ft	619567-006
BH04	S	03-27-19 12:15	.5 ft	619567-007
BH04A	S	03-27-19 12:25	1 ft	619567-008
BH05	S	03-27-19 12:35	.5 ft	619567-009
BH05A	S	03-27-19 12:40	1 ft	619567-010
BH06	S	03-27-19 12:45	.5 ft	619567-011
BH06A	S	03-27-19 12:55	1 ft	619567-012
BH07	S	03-27-19 13:05	.5 ft	619567-013
BH07A	S	03-27-19 13:10	1 ft	619567-014
BH08	S	03-27-19 13:20	.5 ft	619567-015
BH08A	S	03-27-19 13:25	1 ft	619567-016
BH09	S	03-27-19 13:35	.5 ft	619567-017
BH09A	S	03-27-19 13:40	1 ft	619567-018
BH10	S	03-27-19 13:45	.5 ft	619567-019
BH10A	S	03-27-19 13:50	1 ft	619567-020
BH11	S	03-27-19 14:00	.5 ft	619567-021
BH11A	S	03-27-19 14:05	1 ft	619567-022
BH12	S	03-27-19 14:10	.5 ft	619567-023
BH12A	S	03-27-19 14:15	1 ft	619567-024

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Elk Wallow 11 State #1**

Project ID: ---
Work Order Number(s): 619567

Report Date: 08-APR-19
Date Received: 04/01/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084502 BTEX by EPA 8021B

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

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

Samples affected are: 619567-002,619567-003,619567-004,619567-009,619567-007,619567-008,619567-005.

Batch: LBA-3084794 Inorganic Anions by EPA 300

Lab Sample ID 619567-023 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 619567-005, -006, -022, -023, -024.

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

Batch: LBA-3084836 BTEX by EPA 8021B

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



Certificate of Analysis Summary 619567

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1



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

Date Received in Lab: Mon Apr-01-19 07:30 am
Report Date: 08-APR-19
Project Manager: Kalei Stout

<i>Analysis Requested</i>	<i>Lab Id:</i>	619567-001	619567-002	619567-003	619567-004	619567-005	619567-006
	<i>Field Id:</i>	BH01	BH01A	BH02	BH0A	BH03	BH03A
	<i>Depth:</i>	.5- ft	1- ft	.5- ft	1- ft	.5- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-27-19 11:30	Mar-27-19 11:35	Mar-27-19 11:45	Mar-27-19 11:50	Mar-27-19 12:00	Mar-27-19 12:10
BTEX by EPA 8021B	<i>Extracted:</i>	Apr-03-19 15:45	Apr-03-19 15:45	Apr-03-19 15:45	Apr-03-19 15:45	Apr-03-19 15:45	Apr-03-19 15:45
	<i>Analyzed:</i>	Apr-03-19 19:26	Apr-03-19 19:45	Apr-03-19 20:04	Apr-03-19 20:24	Apr-03-19 21:38	Apr-03-19 21:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00401 0.00401	<0.00397 0.00397	<0.00402 0.00402	<0.00398 0.00398	0.0153 0.00398	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	0.0153 0.00199	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	0.0153 0.00199	<0.00200 0.00200
Inorganic Anions by EPA 300	<i>Extracted:</i>	Apr-03-19 17:30	Apr-03-19 17:30	Apr-03-19 17:30	Apr-03-19 17:30	Apr-04-19 08:30	Apr-04-19 08:30
	<i>Analyzed:</i>	Apr-03-19 21:23	Apr-03-19 21:29	Apr-03-19 21:34	Apr-03-19 22:09	Apr-04-19 13:57	Apr-04-19 14:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		71.0 5.03	13.3 4.95	21.7 5.01	14.5 4.98	121 4.98	449 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07
	<i>Analyzed:</i>	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
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)		65.9 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		27.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		93.7 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		65.9 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kalei Stout
Midland Laboratory Director



Certificate of Analysis Summary 619567

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1



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

Date Received in Lab: Mon Apr-01-19 07:30 am
Report Date: 08-APR-19
Project Manager: Kalei Stout

<i>Analysis Requested</i>	<i>Lab Id:</i>	619567-007	619567-008	619567-009	619567-010	619567-011	619567-012
	<i>Field Id:</i>	BH04	BH04A	BH05	BH05A	BH06	BH06A
	<i>Depth:</i>	.5- ft	1- ft	.5- ft	1- ft	.5- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-27-19 12:15	Mar-27-19 12:25	Mar-27-19 12:35	Mar-27-19 12:40	Mar-27-19 12:45	Mar-27-19 12:55
BTEX by EPA 8021B	<i>Extracted:</i>	Apr-03-19 15:45	Apr-03-19 15:45	Apr-03-19 15:45	Apr-03-19 15:45	Apr-03-19 15:45	Apr-03-19 15:45
	<i>Analyzed:</i>	Apr-03-19 22:16	Apr-03-19 22:35	Apr-03-19 22:54	Apr-03-19 23:14	Apr-03-19 23:33	Apr-03-19 23:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
m,p-Xylenes		<0.00402 0.00402	<0.00403 0.00403	<0.00398 0.00398	<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Inorganic Anions by EPA 300	<i>Extracted:</i>	Apr-03-19 17:30	Apr-03-19 17:30	Apr-03-19 17:30	Apr-03-19 17:30	Apr-03-19 17:30	Apr-03-19 17:30
	<i>Analyzed:</i>	Apr-03-19 22:15	Apr-03-19 22:20	Apr-03-19 22:26	Apr-03-19 22:32	Apr-03-19 22:37	Apr-03-19 22:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<4.97 4.97	<4.96 4.96	8.90 4.97	6.88 4.97	<5.00 5.00	<5.03 5.03
TPH by SW8015 Mod	<i>Extracted:</i>	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07
	<i>Analyzed:</i>	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Total GRO-DRO		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9

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Kalei Stout
Midland Laboratory Director



Certificate of Analysis Summary 619567

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1



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

Date Received in Lab: Mon Apr-01-19 07:30 am
Report Date: 08-APR-19
Project Manager: Kalei Stout

<i>Analysis Requested</i>	<i>Lab Id:</i>	619567-013	619567-014	619567-015	619567-016	619567-017	619567-018
	<i>Field Id:</i>	BH07	BH07A	BH08	BH08A	BH09	BH09A
	<i>Depth:</i>	.5- ft	1- ft	.5- ft	1- ft	.5- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-27-19 13:05	Mar-27-19 13:10	Mar-27-19 13:20	Mar-27-19 13:25	Mar-27-19 13:35	Mar-27-19 13:40
BTEX by EPA 8021B	<i>Extracted:</i>	Apr-05-19 11:15	Apr-05-19 11:15	Apr-05-19 11:15	Apr-05-19 11:15	Apr-05-19 11:15	Apr-05-19 11:15
	<i>Analyzed:</i>	Apr-05-19 14:32	Apr-05-19 14:51	Apr-05-19 15:10	Apr-05-19 15:29	Apr-05-19 15:48	Apr-05-19 16:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Toluene		0.00277 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		<0.00401 0.00401	<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00404 0.00404
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Total BTEX		0.00277 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Inorganic Anions by EPA 300	<i>Extracted:</i>	Apr-03-19 17:30	Apr-03-19 17:30	Apr-03-19 17:30	Apr-04-19 15:20	Apr-03-19 17:30	Apr-03-19 17:30
	<i>Analyzed:</i>	Apr-03-19 23:00	Apr-04-19 09:37	Apr-04-19 09:43	Apr-06-19 16:52	Apr-04-19 09:49	Apr-04-19 09:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<4.99 4.99	<4.97 4.97	<4.95 4.95	19.1 5.03	1990 24.8	2440 24.8
TPH by SW8015 Mod	<i>Extracted:</i>	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07	Apr-04-19 10:07
	<i>Analyzed:</i>	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
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	71.7 15.0	<15.0 15.0	29.8 15.0	15.9 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	22.7 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	94.4 15.0	<15.0 15.0	29.8 15.0	15.9 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	71.7 15.0	<15.0 15.0	29.8 15.0	15.9 15.0

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Kalei Stout
Midland Laboratory Director



Certificate of Analysis Summary 619567

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1

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

Date Received in Lab: Mon Apr-01-19 07:30 am
Report Date: 08-APR-19
Project Manager: Kalei Stout

<i>Analysis Requested</i>	<i>Lab Id:</i>	619567-019	619567-020	619567-021	619567-022	619567-023	619567-024
	<i>Field Id:</i>	BH10	BH10A	BH11	BH11A	BH12	BH12A
	<i>Depth:</i>	.5- ft	1- ft	.5- ft	1- ft	.5- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-27-19 13:45	Mar-27-19 13:50	Mar-27-19 14:00	Mar-27-19 14:05	Mar-27-19 14:10	Mar-27-19 14:15
BTEX by EPA 8021B	<i>Extracted:</i>	Apr-05-19 11:15	Apr-05-19 11:15	Apr-05-19 11:15	Apr-05-19 11:15	Apr-05-19 11:15	Apr-05-19 11:15
	<i>Analyzed:</i>	Apr-05-19 16:27	Apr-05-19 17:41	Apr-05-19 18:00	Apr-05-19 18:19	Apr-05-19 18:38	Apr-05-19 18:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199
Toluene		<0.00198 0.00198	<0.00200 0.00200	0.00208 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199
m,p-Xylenes		<0.00397 0.00397	<0.00400 0.00400	<0.00402 0.00402	<0.00398 0.00398	<0.00403 0.00403	<0.00398 0.00398
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	0.00208 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199
Inorganic Anions by EPA 300	<i>Extracted:</i>	Apr-03-19 17:30	Apr-03-19 17:30	Apr-03-19 17:30	Apr-04-19 08:30	Apr-04-19 08:30	Apr-04-19 08:30
	<i>Analyzed:</i>	Apr-04-19 10:00	Apr-04-19 10:06	Apr-04-19 10:11	Apr-04-19 13:23	Apr-04-19 13:06	Apr-04-19 13:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		23.9 4.95	23.4 4.99	541 5.04	486 4.97	109 4.96	91.6 5.04
TPH by SW8015 Mod	<i>Extracted:</i>	Apr-04-19 10:07	Apr-04-19 10:07	Apr-03-19 13:00	Apr-03-19 13:00	Apr-03-19 13:00	Apr-03-19 13:00
	<i>Analyzed:</i>	** ** ** *	** ** ** *	Apr-03-19 19:01	Apr-03-19 19:22	Apr-03-19 19:43	Apr-03-19 20:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		337 15.0	70.2 14.9	1580 14.9	93.0 15.0	183 15.0	28.4 15.0
Motor Oil Range Hydrocarbons (MRO)		137 15.0	27.5 14.9	586 14.9	43.3 15.0	105 15.0	<15.0 15.0
Total TPH		474 15.0	97.7 14.9	2170 14.9	136 15.0	288 15.0	28.4 15.0
Total GRO-DRO		337 15.0	70.2 14.9	1580 14.9	93.0 15.0	183 15.0	28.4 15.0

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Kalei Stout
Midland Laboratory Director



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH01**
 Lab Sample Id: 619567-001

Matrix: Soil
 Date Collected: 03.27.19 11.30

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	71.0	5.03	mg/kg	04.03.19 21.23		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.03.19 22.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	65.9	15.0	mg/kg	04.03.19 22.30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	27.8	15.0	mg/kg	04.03.19 22.30		1
Total TPH	PHC635	93.7	15.0	mg/kg	04.03.19 22.30		1
Total GRO-DRO	PHC628	65.9	15.0	mg/kg	04.03.19 22.30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	04.03.19 22.30	
o-Terphenyl	84-15-1	73	%	70-135	04.03.19 22.30	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH01**
 Lab Sample Id: 619567-001

Matrix: Soil
 Date Collected: 03.27.19 11.30

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 19.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.03.19 19.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.03.19 19.26	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.03.19 19.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.03.19 19.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.03.19 19.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.03.19 19.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	04.03.19 19.26		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.03.19 19.26		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH01A**
 Lab Sample Id: 619567-002

Matrix: Soil
 Date Collected: 03.27.19 11.35

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.3	4.95	mg/kg	04.03.19 21.29		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.03.19 23.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.03.19 23.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.03.19 23.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.03.19 23.32	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.03.19 23.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	04.03.19 23.32	
o-Terphenyl	84-15-1	77	%	70-135	04.03.19 23.32	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH01A**
 Lab Sample Id: 619567-002

Matrix: Soil
 Date Collected: 03.27.19 11.35

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 04.03.19 15.45

Basis: Wet Weight

Seq Number: 3084502

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.03.19 19.45	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.03.19 19.45	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.03.19 19.45	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.03.19 19.45	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.03.19 19.45	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.03.19 19.45	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.03.19 19.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	151	%	70-130	04.03.19 19.45	**	
1,4-Difluorobenzene	540-36-3	99	%	70-130	04.03.19 19.45		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH02** Matrix: Soil Date Received: 04.01.19 07.30
 Lab Sample Id: 619567-003 Date Collected: 03.27.19 11.45 Sample Depth: .5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 04.03.19 17.30 Basis: Wet Weight
 Seq Number: 3084532

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.7	5.01	mg/kg	04.03.19 21.34		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 04.04.19 10.07 Basis: Wet Weight
 Seq Number: 3084484

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.03.19 23.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.03.19 23.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.03.19 23.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.03.19 23.52	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.03.19 23.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-135	04.03.19 23.52	
o-Terphenyl	84-15-1	73	%	70-135	04.03.19 23.52	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH02**
 Lab Sample Id: 619567-003

Matrix: Soil
 Date Collected: 03.27.19 11.45

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 20.04	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.03.19 20.04	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.03.19 20.04	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.03.19 20.04	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.03.19 20.04	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.03.19 20.04	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.03.19 20.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	04.03.19 20.04		
4-Bromofluorobenzene	460-00-4	136	%	70-130	04.03.19 20.04	**	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH0A** Matrix: Soil Date Received: 04.01.19 07.30
 Lab Sample Id: 619567-004 Date Collected: 03.27.19 11.50 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 04.03.19 17.30 Basis: Wet Weight
 Seq Number: 3084532

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.5	4.98	mg/kg	04.03.19 22.09		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 04.04.19 10.07 Basis: Wet Weight
 Seq Number: 3084484

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.04.19 00.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.04.19 00.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 00.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.04.19 00.13	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.04.19 00.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	04.04.19 00.13	
o-Terphenyl	84-15-1	77	%	70-135	04.04.19 00.13	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH0A**
 Lab Sample Id: 619567-004

Matrix: Soil
 Date Collected: 03.27.19 11.50

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 04.03.19 15.45

Basis: Wet Weight

Seq Number: 3084502

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.03.19 20.24	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.03.19 20.24	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.03.19 20.24	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.03.19 20.24	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.03.19 20.24	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.03.19 20.24	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.03.19 20.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	136	%	70-130	04.03.19 20.24	**	
1,4-Difluorobenzene	540-36-3	101	%	70-130	04.03.19 20.24		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH03**
 Lab Sample Id: 619567-005

Matrix: Soil
 Date Collected: 03.27.19 12.00

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084794

Date Prep: 04.04.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	121	4.98	mg/kg	04.04.19 13.57		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 00.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.04.19 00.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 00.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.04.19 00.33	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.04.19 00.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	04.04.19 00.33	
o-Terphenyl	84-15-1	75	%	70-135	04.04.19 00.33	



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH03**
 Lab Sample Id: 619567-005

Matrix: Soil
 Date Collected: 03.27.19 12.00

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 21.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.03.19 21.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.03.19 21.38	U	1
m,p-Xylenes	179601-23-1	0.0153	0.00398	mg/kg	04.03.19 21.38		1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.03.19 21.38	U	1
Total Xylenes	1330-20-7	0.0153	0.00199	mg/kg	04.03.19 21.38		1
Total BTEX		0.0153	0.00199	mg/kg	04.03.19 21.38		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	172	%	70-130	04.03.19 21.38	**	
1,4-Difluorobenzene	540-36-3	123	%	70-130	04.03.19 21.38		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH03A**
 Lab Sample Id: 619567-006

Matrix: Soil
 Date Collected: 03.27.19 12.10

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084794

Date Prep: 04.04.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	449	5.00	mg/kg	04.04.19 14.02		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 00.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.04.19 00.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 00.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.04.19 00.54	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.04.19 00.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	04.04.19 00.54	
o-Terphenyl	84-15-1	84	%	70-135	04.04.19 00.54	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH03A**
 Lab Sample Id: 619567-006

Matrix: Soil
 Date Collected: 03.27.19 12.10

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 21.57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.03.19 21.57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.03.19 21.57	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.03.19 21.57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.03.19 21.57	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.03.19 21.57	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.03.19 21.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	04.03.19 21.57		
4-Bromofluorobenzene	460-00-4	106	%	70-130	04.03.19 21.57		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH04**
 Lab Sample Id: 619567-007

Matrix: Soil
 Date Collected: 03.27.19 12.15

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	04.03.19 22.15	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 01.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.04.19 01.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 01.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.04.19 01.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.04.19 01.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	04.04.19 01.14	
o-Terphenyl	84-15-1	79	%	70-135	04.04.19 01.14	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH04**
 Lab Sample Id: 619567-007

Matrix: Soil
 Date Collected: 03.27.19 12.15

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 22.16	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.03.19 22.16	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.03.19 22.16	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.03.19 22.16	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.03.19 22.16	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.03.19 22.16	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.03.19 22.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	134	%	70-130	04.03.19 22.16	**	
1,4-Difluorobenzene	540-36-3	99	%	70-130	04.03.19 22.16		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH04A**
 Lab Sample Id: 619567-008

Matrix: Soil
 Date Collected: 03.27.19 12.25

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	04.03.19 22.20	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 01.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	04.04.19 01.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	04.04.19 01.35	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	04.04.19 01.35	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	04.04.19 01.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	04.04.19 01.35	
o-Terphenyl	84-15-1	79	%	70-135	04.04.19 01.35	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH04A**
 Lab Sample Id: 619567-008

Matrix: Soil
 Date Collected: 03.27.19 12.25

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 22.35	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.03.19 22.35	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.03.19 22.35	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.03.19 22.35	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.03.19 22.35	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.03.19 22.35	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.03.19 22.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	136	%	70-130	04.03.19 22.35	**	
1,4-Difluorobenzene	540-36-3	98	%	70-130	04.03.19 22.35		



Certificate of Analytical Results 619567



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH05**
Lab Sample Id: 619567-009

Matrix: Soil
Date Collected: 03.27.19 12.35

Date Received: 04.01.19 07.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.90	4.97	mg/kg	04.03.19 22.26		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 01.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.04.19 01.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 01.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.04.19 01.55	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.04.19 01.55	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	83	%	70-135	04.04.19 01.55	
84-15-1	82	%	70-135	04.04.19 01.55	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH05**
 Lab Sample Id: 619567-009

Matrix: Soil
 Date Collected: 03.27.19 12.35

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 22.54	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.03.19 22.54	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.03.19 22.54	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.03.19 22.54	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.03.19 22.54	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.03.19 22.54	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.03.19 22.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	141	%	70-130	04.03.19 22.54	**	
1,4-Difluorobenzene	540-36-3	99	%	70-130	04.03.19 22.54		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH05A**
 Lab Sample Id: 619567-010

Matrix: Soil
 Date Collected: 03.27.19 12.40

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.88	4.97	mg/kg	04.03.19 22.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 02.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.04.19 02.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 02.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.04.19 02.16	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.04.19 02.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	04.04.19 02.16	
o-Terphenyl	84-15-1	82	%	70-135	04.04.19 02.16	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH05A**
 Lab Sample Id: 619567-010

Matrix: Soil
 Date Collected: 03.27.19 12.40

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 23.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.03.19 23.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.03.19 23.14	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.03.19 23.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.03.19 23.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.03.19 23.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.03.19 23.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	04.03.19 23.14		
1,4-Difluorobenzene	540-36-3	109	%	70-130	04.03.19 23.14		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH06**
 Lab Sample Id: 619567-011

Matrix: Soil
 Date Collected: 03.27.19 12.45

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	04.03.19 22.37	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 03.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	04.04.19 03.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	04.04.19 03.16	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	04.04.19 03.16	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	04.04.19 03.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	04.04.19 03.16	
o-Terphenyl	84-15-1	78	%	70-135	04.04.19 03.16	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH06**
 Lab Sample Id: 619567-011

Matrix: Soil
 Date Collected: 03.27.19 12.45

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 23.33	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.03.19 23.33	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.03.19 23.33	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.03.19 23.33	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.03.19 23.33	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.03.19 23.33	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.03.19 23.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	127	%	70-130	04.03.19 23.33		
1,4-Difluorobenzene	540-36-3	103	%	70-130	04.03.19 23.33		



Certificate of Analytical Results 619567



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH06A**
Lab Sample Id: 619567-012

Matrix: Soil
Date Collected: 03.27.19 12.55

Date Received: 04.01.19 07.30
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.03	5.03	mg/kg	04.03.19 22.54	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 03.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	04.04.19 03.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	04.04.19 03.36	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	04.04.19 03.36	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	04.04.19 03.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	04.04.19 03.36	
o-Terphenyl	84-15-1	80	%	70-135	04.04.19 03.36	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH06A**
 Lab Sample Id: 619567-012

Matrix: Soil
 Date Collected: 03.27.19 12.55

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084502

Date Prep: 04.03.19 15.45

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	04.03.19 23.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.03.19 23.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.03.19 23.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.03.19 23.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.03.19 23.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.03.19 23.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.03.19 23.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	04.03.19 23.52		
1,4-Difluorobenzene	540-36-3	109	%	70-130	04.03.19 23.52		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH07**
 Lab Sample Id: 619567-013

Matrix: Soil
 Date Collected: 03.27.19 13.05

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	04.03.19 23.00	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 03.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.04.19 03.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 03.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.04.19 03.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.04.19 03.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	04.04.19 03.57	
o-Terphenyl	84-15-1	80	%	70-135	04.04.19 03.57	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH07**
 Lab Sample Id: 619567-013

Matrix: Soil
 Date Collected: 03.27.19 13.05

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 04.05.19 11.15

Basis: Wet Weight

Seq Number: 3084836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.05.19 14.32	U	1
Toluene	108-88-3	0.00277	0.00200	mg/kg	04.05.19 14.32		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.05.19 14.32	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.05.19 14.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.05.19 14.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.05.19 14.32	U	1
Total BTEX		0.00277	0.00200	mg/kg	04.05.19 14.32		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	72	%	70-130	04.05.19 14.32		
1,4-Difluorobenzene	540-36-3	82	%	70-130	04.05.19 14.32		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH07A**
 Lab Sample Id: 619567-014

Matrix: Soil
 Date Collected: 03.27.19 13.10

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	04.04.19 09.37	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 04.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.04.19 04.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 04.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.04.19 04.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.04.19 04.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	04.04.19 04.17	
o-Terphenyl	84-15-1	88	%	70-135	04.04.19 04.17	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH07A**
 Lab Sample Id: 619567-014

Matrix: Soil
 Date Collected: 03.27.19 13.10

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Date Prep: 04.05.19 11.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.05.19 14.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.05.19 14.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.05.19 14.51	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.05.19 14.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.05.19 14.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.05.19 14.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.05.19 14.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.05.19 14.51		
1,4-Difluorobenzene	540-36-3	90	%	70-130	04.05.19 14.51		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH08**
 Lab Sample Id: 619567-015

Matrix: Soil
 Date Collected: 03.27.19 13.20

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	04.04.19 09.43	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 04.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	71.7	15.0	mg/kg	04.04.19 04.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	22.7	15.0	mg/kg	04.04.19 04.37		1
Total TPH	PHC635	94.4	15.0	mg/kg	04.04.19 04.37		1
Total GRO-DRO	PHC628	71.7	15.0	mg/kg	04.04.19 04.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	04.04.19 04.37	
o-Terphenyl	84-15-1	89	%	70-135	04.04.19 04.37	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH08**
 Lab Sample Id: 619567-015

Matrix: Soil
 Date Collected: 03.27.19 13.20

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Date Prep: 04.05.19 11.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.05.19 15.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.05.19 15.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.05.19 15.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.05.19 15.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.05.19 15.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.05.19 15.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.05.19 15.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	04.05.19 15.10		
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.05.19 15.10		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH08A**
 Lab Sample Id: 619567-016

Matrix: Soil
 Date Collected: 03.27.19 13.25

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084865

Date Prep: 04.04.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.1	5.03	mg/kg	04.06.19 16.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 04.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.04.19 04.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 04.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.04.19 04.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.04.19 04.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	04.04.19 04.57	
o-Terphenyl	84-15-1	83	%	70-135	04.04.19 04.57	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH08A**
 Lab Sample Id: 619567-016

Matrix: Soil
 Date Collected: 03.27.19 13.25

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Date Prep: 04.05.19 11.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.05.19 15.29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.05.19 15.29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.05.19 15.29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.05.19 15.29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.05.19 15.29	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.05.19 15.29	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.05.19 15.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	04.05.19 15.29		
4-Bromofluorobenzene	460-00-4	102	%	70-130	04.05.19 15.29		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH09**
 Lab Sample Id: 619567-017

Matrix: Soil
 Date Collected: 03.27.19 13.35

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1990	24.8	mg/kg	04.04.19 09.49		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 05.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	29.8	15.0	mg/kg	04.04.19 05.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 05.17	U	1
Total TPH	PHC635	29.8	15.0	mg/kg	04.04.19 05.17		1
Total GRO-DRO	PHC628	29.8	15.0	mg/kg	04.04.19 05.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	04.04.19 05.17	
o-Terphenyl	84-15-1	82	%	70-135	04.04.19 05.17	



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH09**
 Lab Sample Id: 619567-017

Matrix: Soil
 Date Collected: 03.27.19 13.35

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Date Prep: 04.05.19 11.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.05.19 15.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.05.19 15.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.05.19 15.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.05.19 15.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.05.19 15.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.05.19 15.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.05.19 15.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	04.05.19 15.48		
1,4-Difluorobenzene	540-36-3	97	%	70-130	04.05.19 15.48		



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH09A**
 Lab Sample Id: 619567-018

Matrix: Soil
 Date Collected: 03.27.19 13.40

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2440	24.8	mg/kg	04.04.19 09.54		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 05.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.9	15.0	mg/kg	04.04.19 05.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.04.19 05.37	U	1
Total TPH	PHC635	15.9	15.0	mg/kg	04.04.19 05.37		1
Total GRO-DRO	PHC628	15.9	15.0	mg/kg	04.04.19 05.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	04.04.19 05.37	
o-Terphenyl	84-15-1	83	%	70-135	04.04.19 05.37	



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH09A**
 Lab Sample Id: 619567-018

Matrix: Soil
 Date Collected: 03.27.19 13.40

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Date Prep: 04.05.19 11.15

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	04.05.19 16.08	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.05.19 16.08	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.05.19 16.08	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.05.19 16.08	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.05.19 16.08	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.05.19 16.08	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.05.19 16.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	04.05.19 16.08		
1,4-Difluorobenzene	540-36-3	97	%	70-130	04.05.19 16.08		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH10** Matrix: Soil Date Received: 04.01.19 07.30
 Lab Sample Id: 619567-019 Date Collected: 03.27.19 13.45 Sample Depth: .5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 04.03.19 17.30 Basis: Wet Weight
 Seq Number: 3084532

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.9	4.95	mg/kg	04.04.19 10.00		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 04.04.19 10.07 Basis: Wet Weight
 Seq Number: 3084484

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.04.19 05.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	337	15.0	mg/kg	04.04.19 05.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	137	15.0	mg/kg	04.04.19 05.57		1
Total TPH	PHC635	474	15.0	mg/kg	04.04.19 05.57		1
Total GRO-DRO	PHC628	337	15.0	mg/kg	04.04.19 05.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	04.04.19 05.57	
o-Terphenyl	84-15-1	86	%	70-135	04.04.19 05.57	



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH10**
 Lab Sample Id: 619567-019

Matrix: Soil
 Date Collected: 03.27.19 13.45

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Date Prep: 04.05.19 11.15

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	04.05.19 16.27	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.05.19 16.27	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.05.19 16.27	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.05.19 16.27	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.05.19 16.27	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.05.19 16.27	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.05.19 16.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	04.05.19 16.27		
4-Bromofluorobenzene	460-00-4	103	%	70-130	04.05.19 16.27		



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH10A**
 Lab Sample Id: 619567-020

Matrix: Soil
 Date Collected: 03.27.19 13.50

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.4	4.99	mg/kg	04.04.19 10.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084484

Date Prep: 04.04.19 10.07

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	04.04.19 06.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	70.2	14.9	mg/kg	04.04.19 06.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	27.5	14.9	mg/kg	04.04.19 06.17		1
Total TPH	PHC635	97.7	14.9	mg/kg	04.04.19 06.17		1
Total GRO-DRO	PHC628	70.2	14.9	mg/kg	04.04.19 06.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	04.04.19 06.17	
o-Terphenyl	84-15-1	84	%	70-135	04.04.19 06.17	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH10A**
 Lab Sample Id: 619567-020

Matrix: Soil
 Date Collected: 03.27.19 13.50

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Prep Method: SW5030B

% Moisture:

Date Prep: 04.05.19 11.15

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.05.19 17.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.05.19 17.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.05.19 17.41	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.05.19 17.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.05.19 17.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.05.19 17.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.05.19 17.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	04.05.19 17.41		
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.05.19 17.41		



Certificate of Analytical Results 619567



LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH11**
Lab Sample Id: 619567-021

Matrix: Soil
Date Collected: 03.27.19 14.00

Date Received: 04.01.19 07.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084532

Date Prep: 04.03.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	541	5.04	mg/kg	04.04.19 10.11		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084451

Date Prep: 04.03.19 13.00

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	04.03.19 19.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	1580	14.9	mg/kg	04.03.19 19.01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	586	14.9	mg/kg	04.03.19 19.01		1
Total TPH	PHC635	2170	14.9	mg/kg	04.03.19 19.01		1
Total GRO-DRO	PHC628	1580	14.9	mg/kg	04.03.19 19.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	04.03.19 19.01	
o-Terphenyl	84-15-1	110	%	70-135	04.03.19 19.01	



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH11**
 Lab Sample Id: 619567-021

Matrix: Soil
 Date Collected: 03.27.19 14.00

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 04.05.19 11.15

Basis: Wet Weight

Seq Number: 3084836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.05.19 18.00	U	1
Toluene	108-88-3	0.00208	0.00201	mg/kg	04.05.19 18.00		1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.05.19 18.00	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.05.19 18.00	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.05.19 18.00	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.05.19 18.00	U	1
Total BTEX		0.00208	0.00201	mg/kg	04.05.19 18.00		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	70-130	04.05.19 18.00		
1,4-Difluorobenzene	540-36-3	85	%	70-130	04.05.19 18.00		



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH11A** Matrix: Soil Date Received: 04.01.19 07.30
 Lab Sample Id: 619567-022 Date Collected: 03.27.19 14.05 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 04.04.19 08.30 Basis: Wet Weight
 Seq Number: 3084794

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	486	4.97	mg/kg	04.04.19 13.23		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 04.03.19 13.00 Basis: Wet Weight
 Seq Number: 3084451

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.03.19 19.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	93.0	15.0	mg/kg	04.03.19 19.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	43.3	15.0	mg/kg	04.03.19 19.22		1
Total TPH	PHC635	136	15.0	mg/kg	04.03.19 19.22		1
Total GRO-DRO	PHC628	93.0	15.0	mg/kg	04.03.19 19.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	04.03.19 19.22	
o-Terphenyl	84-15-1	86	%	70-135	04.03.19 19.22	



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH11A**
 Lab Sample Id: 619567-022

Matrix: Soil
 Date Collected: 03.27.19 14.05

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Date Prep: 04.05.19 11.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.05.19 18.19	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.05.19 18.19	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.05.19 18.19	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.05.19 18.19	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.05.19 18.19	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.05.19 18.19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.05.19 18.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	04.05.19 18.19		
1,4-Difluorobenzene	540-36-3	95	%	70-130	04.05.19 18.19		



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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH12**
 Lab Sample Id: 619567-023

Matrix: Soil
 Date Collected: 03.27.19 14.10

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084794

Date Prep: 04.04.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	109	4.96	mg/kg	04.04.19 13.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084451

Date Prep: 04.03.19 13.00

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	04.03.19 19.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	183	15.0	mg/kg	04.03.19 19.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	105	15.0	mg/kg	04.03.19 19.43		1
Total TPH	PHC635	288	15.0	mg/kg	04.03.19 19.43		1
Total GRO-DRO	PHC628	183	15.0	mg/kg	04.03.19 19.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	04.03.19 19.43	
o-Terphenyl	84-15-1	90	%	70-135	04.03.19 19.43	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH12**
 Lab Sample Id: 619567-023

Matrix: Soil
 Date Collected: 03.27.19 14.10

Date Received: 04.01.19 07.30
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Date Prep: 04.05.19 11.15

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	04.05.19 18.38	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.05.19 18.38	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.05.19 18.38	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.05.19 18.38	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.05.19 18.38	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.05.19 18.38	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.05.19 18.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	04.05.19 18.38		
1,4-Difluorobenzene	540-36-3	97	%	70-130	04.05.19 18.38		



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH12A**
 Lab Sample Id: 619567-024

Matrix: Soil
 Date Collected: 03.27.19 14.15

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3084794

Date Prep: 04.04.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	91.6	5.04	mg/kg	04.04.19 13.29		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084451

Date Prep: 04.03.19 13.00

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	04.03.19 20.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	28.4	15.0	mg/kg	04.03.19 20.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.03.19 20.04	U	1
Total TPH	PHC635	28.4	15.0	mg/kg	04.03.19 20.04		1
Total GRO-DRO	PHC628	28.4	15.0	mg/kg	04.03.19 20.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	04.03.19 20.04	
o-Terphenyl	84-15-1	87	%	70-135	04.03.19 20.04	



Certificate of Analytical Results 619567

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id: **BH12A**
 Lab Sample Id: 619567-024

Matrix: Soil
 Date Collected: 03.27.19 14.15

Date Received: 04.01.19 07.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084836

Date Prep: 04.05.19 11.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.05.19 18.57	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.05.19 18.57	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.05.19 18.57	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.05.19 18.57	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.05.19 18.57	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.05.19 18.57	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.05.19 18.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	04.05.19 18.57		
1,4-Difluorobenzene	540-36-3	97	%	70-130	04.05.19 18.57		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow 11 State #1

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084532

MB Sample Id: 7675003-1-BLK

Matrix: Solid

LCS Sample Id: 7675003-1-BKS

Prep Method: E300P

Date Prep: 04.03.19

LCSD Sample Id: 7675003-1-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	251	100	257	103	90-110	2	20	mg/kg	04.03.19 20:49	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084794

MB Sample Id: 7675004-1-BLK

Matrix: Solid

LCS Sample Id: 7675004-1-BKS

Prep Method: E300P

Date Prep: 04.04.19

LCSD Sample Id: 7675004-1-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	251	100	262	105	90-110	4	20	mg/kg	04.04.19 11:46	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084865

MB Sample Id: 7675143-1-BLK

Matrix: Solid

LCS Sample Id: 7675143-1-BKS

Prep Method: E300P

Date Prep: 04.04.19

LCSD Sample Id: 7675143-1-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	271	108	226	90	90-110	18	20	mg/kg	04.06.19 16:39	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084532

Parent Sample Id: 619529-005

Matrix: Soil

MS Sample Id: 619529-005 S

Prep Method: E300P

Date Prep: 04.03.19

MSD Sample Id: 619529-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.27	250	261	103	258	102	90-110	1	20	mg/kg	04.03.19 21:06	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084532

Parent Sample Id: 619567-011

Matrix: Soil

MS Sample Id: 619567-011 S

Prep Method: E300P

Date Prep: 04.03.19

MSD Sample Id: 619567-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.10	250	263	104	262	104	90-110	0	20	mg/kg	04.03.19 22:43	

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State #1

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084794

Parent Sample Id: 619249-005

Matrix: Soil

MS Sample Id: 619249-005 S

Prep Method: E300P

Date Prep: 04.04.19

MSD Sample Id: 619249-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	56.5	250	340	113	346	116	90-110	2	20	mg/kg	04.04.19 12:09	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084794

Parent Sample Id: 619567-023

Matrix: Soil

MS Sample Id: 619567-023 S

Prep Method: E300P

Date Prep: 04.04.19

MSD Sample Id: 619567-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	109	248	408	121	389	113	90-110	5	20	mg/kg	04.04.19 13:12	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084865

Parent Sample Id: 619567-016

Matrix: Soil

MS Sample Id: 619567-016 S

Prep Method: E300P

Date Prep: 04.04.19

MSD Sample Id: 619567-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	19.1	252	295	109	283	105	90-110	4	20	mg/kg	04.06.19 16:59	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084865

Parent Sample Id: 619598-013

Matrix: Soil

MS Sample Id: 619598-013 S

Prep Method: E300P

Date Prep: 04.04.19

MSD Sample Id: 619598-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.0	250	233	82	302	110	90-110	26	20	mg/kg	04.06.19 18:41	XF

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084451

MB Sample Id: 7674968-1-BLK

Matrix: Solid

LCS Sample Id: 7674968-1-BKS

Prep Method: TX1005P

Date Prep: 04.03.19

LCSD Sample Id: 7674968-1-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	981	98	1000	100	70-135	2	20	mg/kg	04.03.19 11:05	
Diesel Range Organics (DRO)	<8.13	1000	1050	105	1080	108	70-135	3	20	mg/kg	04.03.19 11:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		120		120		70-135	%	04.03.19 11:05
o-Terphenyl	95		117		111		70-135	%	04.03.19 11:05

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084484

MB Sample Id: 7674995-1-BLK

Matrix: Solid

LCS Sample Id: 7674995-1-BKS

Prep Method: TX1005P

Date Prep: 04.04.19

LCSD Sample Id: 7674995-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1010	101	996	100	70-135	1	20	mg/kg	04.03.19 21:48	
Diesel Range Organics (DRO)	<8.13	1000	1100	110	1080	108	70-135	2	20	mg/kg	04.03.19 21:48	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	94		119		122		70-135	%	04.03.19 21:48			
o-Terphenyl	96		108		111		70-135	%	04.03.19 21:48			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084451

Parent Sample Id: 619842-001

Matrix: Soil

MS Sample Id: 619842-001 S

Prep Method: TX1005P

Date Prep: 04.03.19

MSD Sample Id: 619842-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	14.3	1000	901	89	915	90	70-135	2	20	mg/kg	04.03.19 12:05	
Diesel Range Organics (DRO)	38.4	1000	968	93	983	95	70-135	2	20	mg/kg	04.03.19 12:05	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			115		116		70-135	%	04.03.19 12:05			
o-Terphenyl			113		114		70-135	%	04.03.19 12:05			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084484

Parent Sample Id: 619567-001

Matrix: Soil

MS Sample Id: 619567-001 S

Prep Method: TX1005P

Date Prep: 04.04.19

MSD Sample Id: 619567-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	857	86	858	86	70-135	0	20	mg/kg	04.03.19 22:50	
Diesel Range Organics (DRO)	65.9	999	926	86	950	89	70-135	3	20	mg/kg	04.03.19 22:50	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			107		108		70-135	%	04.03.19 22:50			
o-Terphenyl			101		94		70-135	%	04.03.19 22:50			

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084502

MB Sample Id: 7674976-1-BLK

Matrix: Solid

LCS Sample Id: 7674976-1-BKS

Prep Method: SW5030B

Date Prep: 04.03.19

LCSD Sample Id: 7674976-1-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	0.102	102	0.0974	98	70-130	5	35	mg/kg	04.03.19 15:39	
Toluene	<0.00200	0.0998	0.0955	96	0.0916	92	70-130	4	35	mg/kg	04.03.19 15:39	
Ethylbenzene	<0.00200	0.0998	0.0966	97	0.0925	93	70-130	4	35	mg/kg	04.03.19 15:39	
m,p-Xylenes	<0.00101	0.200	0.190	95	0.182	92	70-130	4	35	mg/kg	04.03.19 15:39	
o-Xylene	<0.00200	0.0998	0.0955	96	0.0916	92	70-130	4	35	mg/kg	04.03.19 15:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		102		102		70-130	%	04.03.19 15:39
4-Bromofluorobenzene	94		92		94		70-130	%	04.03.19 15:39

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084836

MB Sample Id: 7675208-1-BLK

Matrix: Solid

LCS Sample Id: 7675208-1-BKS

Prep Method: SW5030B

Date Prep: 04.05.19

LCSD Sample Id: 7675208-1-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	0.100	99	0.100	101	70-130	0	35	mg/kg	04.05.19 23:42	
Toluene	<0.000458	0.101	0.105	104	0.106	107	70-130	1	35	mg/kg	04.05.19 23:42	
Ethylbenzene	<0.000568	0.101	0.0999	99	0.0998	100	70-130	0	35	mg/kg	04.05.19 23:42	
m,p-Xylenes	<0.00102	0.201	0.200	100	0.200	101	70-130	0	35	mg/kg	04.05.19 23:42	
o-Xylene	<0.000346	0.101	0.100	99	0.102	103	70-130	2	35	mg/kg	04.05.19 23:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		97		99		70-130	%	04.05.19 23:42
4-Bromofluorobenzene	86		92		101		70-130	%	04.05.19 23:42

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084502

Parent Sample Id: 619640-001

Matrix: Soil

MS Sample Id: 619640-001 S

Prep Method: SW5030B

Date Prep: 04.03.19

MSD Sample Id: 619640-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000387	0.101	0.0728	72	0.0669	67	70-130	8	35	mg/kg	04.03.19 16:17	X
Toluene	<0.000458	0.101	0.0683	68	0.0618	62	70-130	10	35	mg/kg	04.03.19 16:17	X
Ethylbenzene	<0.000568	0.101	0.0674	67	0.0600	60	70-130	12	35	mg/kg	04.03.19 16:17	X
m,p-Xylenes	<0.00102	0.201	0.134	67	0.119	60	70-130	12	35	mg/kg	04.03.19 16:17	X
o-Xylene	<0.000346	0.101	0.0677	67	0.0601	60	70-130	12	35	mg/kg	04.03.19 16:17	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		106		70-130	%	04.03.19 16:17
4-Bromofluorobenzene	101		101		70-130	%	04.03.19 16:17

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

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

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

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



LT Environmental, Inc.

Elk Wallow 11 State #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084836

Parent Sample Id: 620216-001

Matrix: Soil

MS Sample Id: 620216-001 S

Prep Method: SW5030B

Date Prep: 04.05.19

MSD Sample Id: 620216-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00334	0.0996	0.0954	92	0.0777	75	70-130	20	35	mg/kg	04.05.19 12:20	
Toluene	0.00400	0.0996	0.102	98	0.0855	82	70-130	18	35	mg/kg	04.05.19 12:20	
Ethylbenzene	<0.000563	0.0996	0.0955	96	0.0809	81	70-130	17	35	mg/kg	04.05.19 12:20	
m,p-Xylenes	0.00119	0.199	0.192	96	0.163	81	70-130	16	35	mg/kg	04.05.19 12:20	
o-Xylene	0.000655	0.0996	0.0980	98	0.0830	83	70-130	17	35	mg/kg	04.05.19 12:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		96		70-130	%	04.05.19 12:20
4-Bromofluorobenzene	101		101		70-130	%	04.05.19 12:20

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

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

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

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



Chain of Custody

Work Order No:

1019547

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 (770-449-8600) Tampa, FL (813-620-2000)

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Page

1 of 3

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	lgreen@ltenv.com / abaker@ltenv.com

ANALYSIS REQUEST

Work Order Notes

Project Name:	ELK Wallow 1 State #1	Turn Around	
Project Number:	2RP-4967	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Garrett Green	Due Date:	

Sample Identification				Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments											
BH01				S	3/27/19	1130	.5'	1	X	X	X												
BH01a							1'	1															
BH02							.5'	1															
BH02a						1145	1'	1															
BH03						1150	.5'	1															
BH03a						1200	1'	1															
BH04						1210	.5'	1															
BH04a						1215	1'	1															
BH05						1225	.5'	1															
BH05a						1235	1'	1															
BH05a						1240	1'	1															

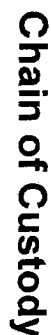
Total 200.7 / 6010 200.8 / 6020:

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

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Pb Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1637 / 245.1 / 7470 / 7471 : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	03/28/2019 15:31	<i>[Signature]</i>	<i>[Signature]</i>	03/28/2019 15:35
<i>[Signature]</i>	<i>[Signature]</i>	04/11/2019 07:30	<i>[Signature]</i>	<i>[Signature]</i>	



Work Order No:

1019567

Page 2 of 2

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

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

Project Name:	Ely Wallow State #1	Turn Around
Project Number:		Routine ☒
P.O. Number:	288-4967	Rush:
Sampler's Name:	Garett Green	Due Date:
SAMPLE RECEIPT		
Temperature (°C):	1.87 ± .1	Thermometer ID
Received intact:	(Yes) No	
Cooler Custody Seals:	Yes No N/A	Correction Factor:
Sample Custody Seals:	Yes No N/A	Total Containers:
TAT starts the day received by the lab, if received by 4:30pm		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
BH06	S	3/27/19	1245	.5'	1	X	X	X	
BH06a			1255	1'	1				
BH07			1305	1.5'	1				
BH07a			1310	1'	1				
BH08			1320	.5'	1				
BH08a			1325	1'	1				
BH09			1335	.5'	1				
BH09a			1340	1'	1				
BH10			1345	.5'	1				
BH10a			1350	1'	1				

1

二

of service. Xerox 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 service. Xerox 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 service. A minimum charge of \$75.00 will be applied to each project and a charge of \$3 for each sample submitted to Xerox, but not analyzed. These terms will be enforced unless previously negotiated. Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xerox, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xerox 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 service. A minimum charge of \$75.00 will be applied to each project and a charge of \$3 for each sample submitted to Xerox, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>[Signature]</i>	<i>[Signature]</i>	03/28/2019 15:28	<i>[Signature]</i>	<i>[Signature]</i>	03/28/2019 15:35
3 <i>[Signature]</i>	<i>[Signature]</i>	4/1/19 0710	4		
5		6			

Revised DPM 05/14/19



Chain of Custody

Work Order No:

6019567

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) 794-1236
 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 3 of 3

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTC
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	kgreen@ltenv.com

Program: UST/PST ☐ RP ☐ Rowfields ☐ C ☐ Jperfund ☐ State of Project:	
Reporting Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐	Deliverables: EDD ☐ ADAPT ☐ Other: ☐

Project Name:	Elk Wall on State #1 Turn Around	ANALYSIS REQUEST		Work Order Notes
Project Number:	2RP-4967	Routine	☒	
P.O. Number:	Garrett Green	Rush:		
Sampler's Name:	Garrett Green	Due Date:		
SAMPLE RECEIPT Temp Blank: Yes ☐ No ☒ Wet Ice: Yes ☐ No ☒ Temperature (°C): 18.1.7 Thermometer ID: RG Received intact: Yes ☒ No ☐ Cooler Custody Seals: Yes ☒ No ☐ Correction Factor: -0.1 Sample Custody Seals: Yes ☒ No ☐ Total Containers:		Number of Containers TPH (EPA 8015) ☒ BTEX (EPA 8021) ☒ Chloride (EPA 300.0) ☒		
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
BH11	3	3/27/19	1400	5'
BH11a	1		1405	1'
BH12	1		1410	5'
BH12a	1		1415	1'
Relinquished by: (Signature) _____ Received by: (Signature) _____ Date/Time _____ Date/Time _____				

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 ShO2 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
Adrian Baker	[Signature]	03/28/20 15:00	[Signature]	[Signature]	03/28/20 15:15
Garrett Green	[Signature]	4/1/19 0730			



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04/01/2019 07:30:00 AM

Work Order #: 619567

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)?	1.7
#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: 04/01/2019

Checklist reviewed by:

Kalei Stout

Date: 04/03/2019

Analytical Report 639761

for
LT Environmental, Inc.

Project Manager: Dan Moir

Elk Wallow II State Battery

012918147

17-OCT-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

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

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

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



17-OCT-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **639761**

Elk Wallow II State Battery

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) 639761. 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. 639761 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH10	S	10-09-19 10:22	3 ft	639761-001
PH10A	S	10-09-19 10:30	4 ft	639761-002
PH11	S	10-09-19 11:00	1 ft	639761-003
PH11A	S	10-09-19 11:15	4 ft	639761-004
PH12	S	10-09-19 11:50	4 ft	639761-005
PH12A	S	10-09-19 12:15	6 ft	639761-006
PH13	S	10-09-19 13:10	3 ft	639761-007
PH13A	S	10-09-19 13:20	6 ft	639761-008
PH14	S	10-09-19 14:40	1 ft	639761-009
PH14A	S	10-09-19 14:50	6 ft	639761-010
PH15	S	10-10-19 09:10	3 ft	639761-011
PH15A	S	10-10-19 09:20	6 ft	639761-012
PH16	S	10-10-19 10:10	3 ft	639761-013
PH16A	S	10-10-19 10:20	6 ft	639761-014
PH17	S	10-10-19 10:40	1 ft	639761-015
PH17A	S	10-10-19 11:00	6 ft	639761-016
PH18	S	10-10-19 11:10	1 ft	639761-017
PH18A	S	10-10-19 11:30	6 ft	639761-018
PH19	S	10-10-19 12:10	3 ft	639761-019
PH19A	S	10-10-19 12:20	6 ft	639761-020
PH20	S	10-10-19 13:05	2 ft	639761-021
PH20A	S	10-10-19 13:20	6 ft	639761-022
PH21	S	10-10-19 13:40	1 ft	639761-023
PH21A	S	10-10-19 14:00	6 ft	639761-024
PH22	S	10-10-19 14:25	2 ft	639761-025
PH22A	S	10-10-19 14:40	6 ft	639761-026
PH23	S	10-10-19 15:00	3 ft	639761-027
PH23A	S	10-10-19 15:10	6 ft	639761-028



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Elk Wallow II State Battery*

Project ID: 012918147

Work Order Number(s): 639761

Report Date: 17-OCT-19

Date Received: 10/11/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 639761



LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 012918147

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-11-19 12:35 pm

Report Date: 17-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	639761-001	639761-002	639761-003	639761-004	639761-005	639761-006
	<i>Field Id:</i>	PH10	PH10A	PH11	PH11A	PH12	PH12A
	<i>Depth:</i>	3- ft	4- ft	1- ft	4- ft	4- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-09-19 10:22	Oct-09-19 10:30	Oct-09-19 11:00	Oct-09-19 11:15	Oct-09-19 11:50	Oct-09-19 12:15
BTEX by SW 8260C SUB: T104704215-19-30	<i>Extracted:</i>	Oct-13-19 09:20	Oct-13-19 09:20	Oct-13-19 09:20	Oct-13-19 09:20	Oct-13-19 09:20	Oct-13-19 09:20
	<i>Analyzed:</i>	Oct-13-19 12:49	Oct-13-19 16:39	Oct-13-19 16:56	Oct-13-19 17:13	Oct-13-19 17:31	Oct-13-19 17:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00101 0.00101	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100
Toluene		<0.00503 0.00503	<0.00504 0.00504	<0.00499 0.00499	<0.00499 0.00499	<0.00496 0.00496	<0.00500 0.00500
Ethylbenzene		<0.00101 0.00101	<0.00101 0.00101	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100
m,p-Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.00101 0.00101	<0.00101 0.00101	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100
Total Xylenes		<0.00101 0.00101	<0.00101 0.00101	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100
Total BTEX		<0.00101 0.00101	<0.00101 0.00101	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100
Chloride by EPA 300 SUB: T104704215-19-30	<i>Extracted:</i>	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30
	<i>Analyzed:</i>	Oct-14-19 18:23	Oct-14-19 19:00	Oct-14-19 19:13	Oct-14-19 19:25	Oct-14-19 19:37	Oct-14-19 20:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		288 9.98	133 9.96	1440 9.94	185 10.0	1480 9.84	519 10.2
TPH by SW8015 Mod SUB: T104704215-19-30	<i>Extracted:</i>	Oct-14-19 13:59	Oct-14-19 14:08	Oct-14-19 14:11	Oct-14-19 14:14	Oct-14-19 14:17	Oct-14-19 14:20
	<i>Analyzed:</i>	Oct-14-19 20:16	Oct-14-19 21:12	Oct-15-19 09:59	Oct-14-19 21:49	Oct-14-19 22:08	Oct-15-19 10:18
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.3 50.3	<50.1 50.1	<50.2 50.2	<49.8 49.8	<50.3 50.3
Diesel Range Organics (DRO)		<50.3 50.3	<50.3 50.3	108 50.1	<50.2 50.2	<49.8 49.8	<50.3 50.3
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.3 50.3	<50.1 50.1	<50.2 50.2	<49.8 49.8	<50.3 50.3
Total GRO-DRO		<50.3 50.3	<50.3 50.3	108 50.1	<50.2 50.2	<49.8 49.8	<50.3 50.3
Total TPH		<50.3 50.3	<50.3 50.3	108 50.1	<50.2 50.2	<49.8 49.8	<50.3 50.3

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

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 639761

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 012918147

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-11-19 12:35 pm

Report Date: 17-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	639761-007	639761-008	639761-009	639761-010	639761-011	639761-012
	<i>Field Id:</i>	PH13	PH13A	PH14	PH14A	PH15	PH15A
	<i>Depth:</i>	3- ft	6- ft	1- ft	6- ft	3- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-09-19 13:10	Oct-09-19 13:20	Oct-09-19 14:40	Oct-09-19 14:50	Oct-10-19 09:10	Oct-10-19 09:20
BTEX by SW 8260C SUB: T104704215-19-30	<i>Extracted:</i>	Oct-13-19 09:20	Oct-13-19 09:20	Oct-13-19 09:20	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30
	<i>Analyzed:</i>	Oct-13-19 18:06	Oct-13-19 18:24	Oct-13-19 18:41	Oct-13-19 23:06	Oct-13-19 23:24	Oct-13-19 23:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998
Toluene		<0.00498 0.00498	<0.00499 0.00499	<0.00499 0.00499	<0.00501 0.00501	<0.00500 0.00500	<0.00499 0.00499
Ethylbenzene		<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998
m,p-Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998
Total Xylenes		<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998
Total BTEX		<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998
Chloride by EPA 300 SUB: T104704215-19-30	<i>Extracted:</i>	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30
	<i>Analyzed:</i>	Oct-14-19 20:27	Oct-14-19 20:40	Oct-14-19 20:52	Oct-14-19 21:04	Oct-14-19 21:17	Oct-14-19 21:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		90.0 10.1	3510 10.1	85.2 9.84	861 9.94	10.0 9.98	<9.94 9.94
TPH by SW8015 Mod SUB: T104704215-19-30	<i>Extracted:</i>	Oct-14-19 14:23	Oct-14-19 14:26	Oct-14-19 14:29	Oct-14-19 14:32	Oct-14-19 14:35	Oct-14-19 14:38
	<i>Analyzed:</i>	Oct-14-19 22:46	Oct-15-19 15:58	Oct-15-19 10:37	Oct-15-19 10:55	Oct-15-19 11:14	Oct-15-19 17:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.1 50.1	<49.7 49.7	<49.5 49.5	<49.6 49.6	<50.0 50.0
Diesel Range Organics (DRO)		<50.2 50.2	<50.1 50.1	255 49.7	<49.5 49.5	<49.6 49.6	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.1 50.1	163 49.7	<49.5 49.5	<49.6 49.6	<50.0 50.0
Total GRO-DRO		<50.2 50.2	<50.1 50.1	255 49.7	<49.5 49.5	<49.6 49.6	<50.0 50.0
Total TPH		<50.2 50.2	<50.1 50.1	418 49.7	<49.5 49.5	<49.6 49.6	<50.0 50.0

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 639761

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 012918147

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-11-19 12:35 pm

Report Date: 17-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	639761-013	639761-014	639761-015	639761-016	639761-017	639761-018
	<i>Field Id:</i>	PH16	PH16A	PH17	PH17A	PH18	PH18A
	<i>Depth:</i>	3- ft	6- ft	1- ft	6- ft	1- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-10-19 10:10	Oct-10-19 10:20	Oct-10-19 10:40	Oct-10-19 11:00	Oct-10-19 11:10	Oct-10-19 11:30
BTEX by SW 8260C SUB: T104704215-19-30	<i>Extracted:</i>	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30
	<i>Analyzed:</i>	Oct-13-19 23:59	Oct-13-19 22:48	Oct-14-19 00:16	Oct-14-19 00:34	Oct-14-19 00:52	Oct-14-19 01:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100
Toluene		<0.00498 0.00498	<0.00500 0.00500	<0.00501 0.00501	<0.00500 0.00500	<0.00497 0.00497	<0.00500 0.00500
Ethylbenzene		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
o-Xylene		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100
Total Xylenes		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100
Total BTEX		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100
Chloride by EPA 300 SUB: T104704215-19-30	<i>Extracted:</i>	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:30
	<i>Analyzed:</i>	Oct-14-19 22:07	Oct-14-19 22:44	Oct-14-19 22:56	Oct-14-19 23:09	Oct-14-19 23:21	Oct-14-19 23:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		10.7 10.1	<10.2 10.2	82.1 10.1	<10.0 10.0	14.1 9.96	<9.98 9.98
TPH by SW8015 Mod SUB: T104704215-19-30	<i>Extracted:</i>	Oct-14-19 14:41	Oct-14-19 14:44	Oct-14-19 14:47	Oct-14-19 14:50	Oct-14-19 14:53	Oct-14-19 14:56
	<i>Analyzed:</i>	Oct-15-19 16:17	Oct-15-19 16:17	Oct-15-19 18:08	Oct-15-19 11:51	Oct-15-19 18:27	Oct-15-19 18:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.7 49.7	<50.3 50.3	<49.8 49.8	<49.9 49.9	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<49.7 49.7	<50.3 50.3	<49.8 49.8	<49.9 49.9	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.7 49.7	<50.3 50.3	<49.8 49.8	<49.9 49.9	<50.0 50.0	<50.0 50.0
Total GRO-DRO		<49.7 49.7	<50.3 50.3	<49.8 49.8	<49.9 49.9	<50.0 50.0	<50.0 50.0
Total TPH		<49.7 49.7	<50.3 50.3	<49.8 49.8	<49.9 49.9	<50.0 50.0	<50.0 50.0

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 639761

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 012918147

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-11-19 12:35 pm

Report Date: 17-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	639761-013	639761-014	639761-015	639761-016	639761-017	639761-018
	<i>Field Id:</i>	PH16	PH16A	PH17	PH17A	PH18	PH18A
	<i>Depth:</i>	3- ft	6- ft	1- ft	6- ft	1- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-10-19 10:10	Oct-10-19 10:20	Oct-10-19 10:40	Oct-10-19 11:00	Oct-10-19 11:10	Oct-10-19 11:30
TPH by SW8015 Mod SUB: T104704215-19-30	<i>Extracted:</i>				Oct-14-19 14:50		
	<i>Analyzed:</i>				Oct-15-19 11:51		
	<i>Units/RL:</i>				mg/kg RL		
Gasoline Range Hydrocarbons (GRO)					<49.9 49.9		
Diesel Range Organics (DRO)					<49.9 49.9		

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Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 639761

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 012918147

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-11-19 12:35 pm

Report Date: 17-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	639761-019	639761-020	639761-021	639761-022	639761-023	639761-024
	<i>Field Id:</i>	PH19	PH19A	PH20	PH20A	PH21	PH21A
	<i>Depth:</i>	3- ft	6- ft	2- ft	6- ft	1- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-10-19 12:10	Oct-10-19 12:20	Oct-10-19 13:05	Oct-10-19 13:20	Oct-10-19 13:40	Oct-10-19 14:00
BTEX by SW 8260C SUB: T104704215-19-30	<i>Extracted:</i>	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30
	<i>Analyzed:</i>	Oct-14-19 01:28	Oct-14-19 01:45	Oct-14-19 02:03	Oct-14-19 02:21	Oct-14-19 02:39	Oct-14-19 02:56
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996
Toluene		<0.00500 0.00500	<0.00497 0.00497	<0.00500 0.00500	<0.00500 0.00500	<0.00504 0.00504	<0.00498 0.00498
Ethylbenzene		<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
o-Xylene		<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996
Total Xylenes		<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996
Total BTEX		<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996
Chloride by EPA 300 SUB: T104704215-19-30	<i>Extracted:</i>	Oct-14-19 15:30	Oct-14-19 15:30	Oct-14-19 15:40	Oct-14-19 15:40	Oct-14-19 15:40	Oct-14-19 15:40
	<i>Analyzed:</i>	Oct-14-19 23:46	Oct-14-19 23:58	Oct-14-19 19:17	Oct-14-19 19:50	Oct-14-19 20:01	Oct-14-19 20:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<10.0 10.0	13.6 9.84	30.7 9.98	10.6 10.2	18.6 10.1	12.6 9.90
TPH by SW8015 Mod SUB: T104704215-19-30	<i>Extracted:</i>	Oct-14-19 14:59	Oct-14-19 15:02	Oct-14-19 15:14	Oct-14-19 15:23	Oct-14-19 15:26	Oct-14-19 15:29
	<i>Analyzed:</i>	Oct-15-19 19:05	Oct-15-19 19:24	Oct-15-19 18:27	Oct-15-19 19:24	Oct-15-19 19:42	Oct-15-19 20:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.3 50.3	<50.2 50.2	<49.8 49.8
Diesel Range Organics (DRO)		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.3 50.3	<50.2 50.2	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.3 50.3	<50.2 50.2	<49.8 49.8
Total GRO-DRO		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.3 50.3	<50.2 50.2	<49.8 49.8
Total TPH		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.3 50.3	<50.2 50.2	<49.8 49.8

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 639761

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 012918147

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-11-19 12:35 pm

Report Date: 17-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	639761-025	639761-026	639761-027	639761-028		
	<i>Field Id:</i>	PH22	PH22A	PH23	PH23A		
	<i>Depth:</i>	2- ft	6- ft	3- ft	6- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Oct-10-19 14:25	Oct-10-19 14:40	Oct-10-19 15:00	Oct-10-19 15:10		
BTEX by SW 8260C	<i>Extracted:</i>	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30	Oct-13-19 16:30		
SUB: T104704215-19-30	<i>Analyzed:</i>	Oct-14-19 03:14	Oct-14-19 03:32	Oct-14-19 03:50	Oct-14-19 04:07		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101		
Toluene		<0.00500 0.00500	<0.00499 0.00499	<0.00503 0.00503	<0.00503 0.00503		
Ethylbenzene		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101		
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201		
o-Xylene		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101		
Total Xylenes		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101		
Total BTEX		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101		
Chloride by EPA 300	<i>Extracted:</i>	Oct-14-19 15:40	Oct-14-19 15:40	Oct-14-19 15:40	Oct-14-19 15:40		
SUB: T104704215-19-30	<i>Analyzed:</i>	Oct-14-19 20:24	Oct-14-19 20:58	Oct-14-19 21:09	Oct-14-19 21:20		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		37.9 9.98	33.5 9.96	37.7 9.98	24.2 10.0		
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-14-19 15:32	Oct-14-19 15:35	Oct-14-19 15:38	Oct-14-19 15:41		
SUB: T104704215-19-30	<i>Analyzed:</i>	Oct-15-19 20:20	Oct-15-19 19:42	Oct-15-19 20:01	Oct-15-19 20:20		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<49.5 49.5	<50.1 50.1	<50.0 50.0		
Diesel Range Organics (DRO)		<50.2 50.2	<49.5 49.5	<50.1 50.1	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<49.5 49.5	<50.1 50.1	<50.0 50.0		
Total GRO-DRO		<50.2 50.2	<49.5 49.5	<50.1 50.1	<50.0 50.0		
Total TPH		<50.2 50.2	<49.5 49.5	<50.1 50.1	<50.0 50.0		

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH10**
Lab Sample Id: 639761-001

Matrix: Soil
Date Collected: 10.09.19 10.22

Date Received: 10.11.19 12.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	288	9.98	mg/kg	10.14.19 18.23		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 13.59

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.14.19 20.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.14.19 20.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.14.19 20.16	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.14.19 20.16	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.14.19 20.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.14.19 20.16	
o-Terphenyl	84-15-1	97	%	70-135	10.14.19 20.16	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH10**
 Lab Sample Id: 639761-001

Matrix: Soil
 Date Collected: 10.09.19 10.22

Date Received: 10.11.19 12.35
 Sample Depth: 3 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104088

Date Prep: 10.13.19 09.20

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.13.19 12.49	U	1
Toluene	108-88-3	<0.00503	0.00503	mg/kg	10.13.19 12.49	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.13.19 12.49	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.13.19 12.49	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.13.19 12.49	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.13.19 12.49	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.13.19 12.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	98	%	53-142	10.13.19 12.49	
1,2-Dichloroethane-D4	17060-07-0	96	%	53-150	10.13.19 12.49	
Toluene-D8	2037-26-5	104	%	70-130	10.13.19 12.49	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH10A**
 Lab Sample Id: 639761-002

Matrix: Soil
 Date Collected: 10.09.19 10.30

Date Received: 10.11.19 12.35
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	133	9.96	mg/kg	10.14.19 19.00		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.08

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.14.19 21.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.14.19 21.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.14.19 21.12	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.14.19 21.12	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.14.19 21.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-135	10.14.19 21.12	
o-Terphenyl	84-15-1	75	%	70-135	10.14.19 21.12	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH10A**
 Lab Sample Id: 639761-002

Matrix: Soil
 Date Collected: 10.09.19 10.30

Date Received: 10.11.19 12.35
 Sample Depth: 4 ft

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: CRL

% Moisture:

Analyst: CRL

Date Prep: 10.13.19 09.20

Basis: Wet Weight

Seq Number: 3104088

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.13.19 16.39	U	1
Toluene	108-88-3	<0.00504	0.00504	mg/kg	10.13.19 16.39	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.13.19 16.39	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	10.13.19 16.39	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.13.19 16.39	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.13.19 16.39	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.13.19 16.39	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	96		%	53-142	10.13.19 16.39	
1,2-Dichloroethane-D4	17060-07-0	100		%	53-150	10.13.19 16.39	
Toluene-D8	2037-26-5	101		%	70-130	10.13.19 16.39	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH11**
Lab Sample Id: 639761-003

Matrix: Soil
Date Collected: 10.09.19 11.00

Date Received: 10.11.19 12.35
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1440	9.94	mg/kg	10.14.19 19.13		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.11

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.15.19 09.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	108	50.1	mg/kg	10.15.19 09.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.15.19 09.59	U	1
Total GRO-DRO	PHC628	108	50.1	mg/kg	10.15.19 09.59		1
Total TPH	PHC635	108	50.1	mg/kg	10.15.19 09.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.15.19 09.59	
o-Terphenyl	84-15-1	96	%	70-135	10.15.19 09.59	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH11**
 Lab Sample Id: 639761-003

Matrix: Soil
 Date Collected: 10.09.19 11.00

Date Received: 10.11.19 12.35
 Sample Depth: 1 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104088

Date Prep: 10.13.19 09.20

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.13.19 16.56	U	1
Toluene	108-88-3	<0.00499	0.00499	mg/kg	10.13.19 16.56	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.13.19 16.56	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.13.19 16.56	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.13.19 16.56	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.13.19 16.56	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.13.19 16.56	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	95		%	53-142	10.13.19 16.56	
1,2-Dichloroethane-D4	17060-07-0	97		%	53-150	10.13.19 16.56	
Toluene-D8	2037-26-5	106		%	70-130	10.13.19 16.56	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH11A**
Lab Sample Id: 639761-004

Matrix: Soil
Date Collected: 10.09.19 11.15

Date Received: 10.11.19 12.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	185	10.0	mg/kg	10.14.19 19.25		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.14

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.14.19 21.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.14.19 21.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.14.19 21.49	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.14.19 21.49	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.14.19 21.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	10.14.19 21.49	
o-Terphenyl	84-15-1	85	%	70-135	10.14.19 21.49	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH11A**
 Lab Sample Id: 639761-004

Matrix: Soil
 Date Collected: 10.09.19 11.15

Date Received: 10.11.19 12.35
 Sample Depth: 4 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104088

Date Prep: 10.13.19 09.20

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.13.19 17.13	U	1
Toluene	108-88-3	<0.00499	0.00499	mg/kg	10.13.19 17.13	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.13.19 17.13	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.13.19 17.13	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.13.19 17.13	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.13.19 17.13	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.13.19 17.13	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	98		%	53-142	10.13.19 17.13	
1,2-Dichloroethane-D4	17060-07-0	104		%	53-150	10.13.19 17.13	
Toluene-D8	2037-26-5	103		%	70-130	10.13.19 17.13	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH12**
Lab Sample Id: 639761-005

Matrix: Soil
Date Collected: 10.09.19 11.50

Date Received: 10.11.19 12.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1480	9.84	mg/kg	10.14.19 19.37		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.17

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.14.19 22.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.14.19 22.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.14.19 22.08	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.14.19 22.08	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.14.19 22.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	73	%	70-135	10.14.19 22.08	
o-Terphenyl	84-15-1	79	%	70-135	10.14.19 22.08	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH12**
 Lab Sample Id: 639761-005

Matrix: Soil
 Date Collected: 10.09.19 11.50

Date Received: 10.11.19 12.35
 Sample Depth: 4 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104088

Date Prep: 10.13.19 09.20

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	10.13.19 17.31	U	1
Toluene	108-88-3	<0.00496	0.00496	mg/kg	10.13.19 17.31	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	10.13.19 17.31	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	10.13.19 17.31	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	10.13.19 17.31	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	10.13.19 17.31	U	1
Total BTEX		<0.000992	0.000992	mg/kg	10.13.19 17.31	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	96		%	53-142	10.13.19 17.31	
1,2-Dichloroethane-D4	17060-07-0	100		%	53-150	10.13.19 17.31	
Toluene-D8	2037-26-5	103		%	70-130	10.13.19 17.31	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH12A**
 Lab Sample Id: 639761-006

Matrix: Soil
 Date Collected: 10.09.19 12.15

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	519	10.2	mg/kg	10.14.19 20.15		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.15.19 10.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.15.19 10.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.15.19 10.18	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.15.19 10.18	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.15.19 10.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.15.19 10.18	
o-Terphenyl	84-15-1	95	%	70-135	10.15.19 10.18	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH12A**
 Lab Sample Id: 639761-006

Matrix: Soil
 Date Collected: 10.09.19 12.15

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: CRL

% Moisture:

Analyst: CRL

Date Prep: 10.13.19 09.20

Basis: Wet Weight

Seq Number: 3104088

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.13.19 17.48	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	10.13.19 17.48	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.13.19 17.48	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.13.19 17.48	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.13.19 17.48	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.13.19 17.48	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.13.19 17.48	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	100		%	53-142	10.13.19 17.48	
1,2-Dichloroethane-D4	17060-07-0	105		%	53-150	10.13.19 17.48	
Toluene-D8	2037-26-5	104		%	70-130	10.13.19 17.48	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH13**
Lab Sample Id: 639761-007

Matrix: Soil
Date Collected: 10.09.19 13.10

Date Received: 10.11.19 12.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	90.0	10.1	mg/kg	10.14.19 20.27		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.23

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.14.19 22.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.14.19 22.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.14.19 22.46	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.14.19 22.46	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.14.19 22.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	10.14.19 22.46	
o-Terphenyl	84-15-1	81	%	70-135	10.14.19 22.46	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH13**
 Lab Sample Id: 639761-007

Matrix: Soil
 Date Collected: 10.09.19 13.10

Date Received: 10.11.19 12.35
 Sample Depth: 3 ft

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: CRL

% Moisture:

Analyst: CRL

Date Prep: 10.13.19 09.20

Basis: Wet Weight

Seq Number: 3104088

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	10.13.19 18.06	U	1
Toluene	108-88-3	<0.00498	0.00498	mg/kg	10.13.19 18.06	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	10.13.19 18.06	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	10.13.19 18.06	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	10.13.19 18.06	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	10.13.19 18.06	U	1
Total BTEX		<0.000996	0.000996	mg/kg	10.13.19 18.06	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	105		%	53-142	10.13.19 18.06	
1,2-Dichloroethane-D4	17060-07-0	116		%	53-150	10.13.19 18.06	
Toluene-D8	2037-26-5	105		%	70-130	10.13.19 18.06	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH13A**
Lab Sample Id: 639761-008

Matrix: Soil
Date Collected: 10.09.19 13.20

Date Received: 10.11.19 12.35
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3510	10.1	mg/kg	10.14.19 20.40		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.26

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.15.19 15.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.15.19 15.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.15.19 15.58	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.15.19 15.58	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.15.19 15.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.15.19 15.58	
o-Terphenyl	84-15-1	96	%	70-135	10.15.19 15.58	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH13A**
 Lab Sample Id: 639761-008

Matrix: Soil
 Date Collected: 10.09.19 13.20

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104088

Date Prep: 10.13.19 09.20

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.13.19 18.24	U	1
Toluene	108-88-3	<0.00499	0.00499	mg/kg	10.13.19 18.24	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.13.19 18.24	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.13.19 18.24	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.13.19 18.24	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.13.19 18.24	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.13.19 18.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	99	%	53-142	10.13.19 18.24	
1,2-Dichloroethane-D4	17060-07-0	99	%	53-150	10.13.19 18.24	
Toluene-D8	2037-26-5	105	%	70-130	10.13.19 18.24	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH14**
Lab Sample Id: 639761-009

Matrix: Soil
Date Collected: 10.09.19 14.40

Date Received: 10.11.19 12.35
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	85.2	9.84	mg/kg	10.14.19 20.52		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.29

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.7	49.7	mg/kg	10.15.19 10.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	255	49.7	mg/kg	10.15.19 10.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	163	49.7	mg/kg	10.15.19 10.37		1
Total GRO-DRO	PHC628	255	49.7	mg/kg	10.15.19 10.37		1
Total TPH	PHC635	418	49.7	mg/kg	10.15.19 10.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.15.19 10.37	
o-Terphenyl	84-15-1	77	%	70-135	10.15.19 10.37	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH14**
 Lab Sample Id: 639761-009

Matrix: Soil
 Date Collected: 10.09.19 14.40

Date Received: 10.11.19 12.35
 Sample Depth: 1 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104088

Date Prep: 10.13.19 09.20

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.13.19 18.41	U	1
Toluene	108-88-3	<0.00499	0.00499	mg/kg	10.13.19 18.41	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.13.19 18.41	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.13.19 18.41	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.13.19 18.41	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.13.19 18.41	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.13.19 18.41	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	101		%	53-142	10.13.19 18.41	
1,2-Dichloroethane-D4	17060-07-0	103		%	53-150	10.13.19 18.41	
Toluene-D8	2037-26-5	101		%	70-130	10.13.19 18.41	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH14A**
Lab Sample Id: 639761-010

Matrix: Soil
Date Collected: 10.09.19 14.50

Date Received: 10.11.19 12.35
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	861	9.94	mg/kg	10.14.19 21.04		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.32

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.5	49.5	mg/kg	10.15.19 10.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.5	49.5	mg/kg	10.15.19 10.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.5	49.5	mg/kg	10.15.19 10.55	U	1
Total GRO-DRO	PHC628	<49.5	49.5	mg/kg	10.15.19 10.55	U	1
Total TPH	PHC635	<49.5	49.5	mg/kg	10.15.19 10.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.15.19 10.55	
o-Terphenyl	84-15-1	101	%	70-135	10.15.19 10.55	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH14A**
 Lab Sample Id: 639761-010

Matrix: Soil
 Date Collected: 10.09.19 14.50

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: CRL

% Moisture:

Analyst: CRL

Date Prep: 10.13.19 16.30

Basis: Wet Weight

Seq Number: 3104115

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.13.19 23.06	U	1
Toluene	108-88-3	<0.00501	0.00501	mg/kg	10.13.19 23.06	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.13.19 23.06	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.13.19 23.06	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.13.19 23.06	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.13.19 23.06	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.13.19 23.06	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	101		%	53-142	10.13.19 23.06	
1,2-Dichloroethane-D4	17060-07-0	102		%	53-150	10.13.19 23.06	
Toluene-D8	2037-26-5	102		%	70-130	10.13.19 23.06	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH15**
Lab Sample Id: 639761-011

Matrix: Soil
Date Collected: 10.10.19 09.10

Date Received: 10.11.19 12.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.0	9.98	mg/kg	10.14.19 21.17		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.35

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.6	49.6	mg/kg	10.15.19 11.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.6	49.6	mg/kg	10.15.19 11.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.6	49.6	mg/kg	10.15.19 11.14	U	1
Total GRO-DRO	PHC628	<49.6	49.6	mg/kg	10.15.19 11.14	U	1
Total TPH	PHC635	<49.6	49.6	mg/kg	10.15.19 11.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.15.19 11.14	
o-Terphenyl	84-15-1	98	%	70-135	10.15.19 11.14	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH15**
 Lab Sample Id: 639761-011

Matrix: Soil
 Date Collected: 10.10.19 09.10

Date Received: 10.11.19 12.35
 Sample Depth: 3 ft

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: CRL

% Moisture:

Analyst: CRL

Date Prep: 10.13.19 16.30

Basis: Wet Weight

Seq Number: 3104115

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.13.19 23.24	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	10.13.19 23.24	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.13.19 23.24	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.13.19 23.24	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.13.19 23.24	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.13.19 23.24	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.13.19 23.24	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	99		%	53-142	10.13.19 23.24	
1,2-Dichloroethane-D4	17060-07-0	101		%	53-150	10.13.19 23.24	
Toluene-D8	2037-26-5	102		%	70-130	10.13.19 23.24	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH15A**
Lab Sample Id: 639761-012

Matrix: Soil
Date Collected: 10.10.19 09.20

Date Received: 10.11.19 12.35
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.94	9.94	mg/kg	10.14.19 21.54	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.38

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.15.19 17.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.15.19 17.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.15.19 17.49	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.15.19 17.49	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.15.19 17.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	10.15.19 17.49	
o-Terphenyl	84-15-1	82	%	70-135	10.15.19 17.49	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH15A**
 Lab Sample Id: 639761-012

Matrix: Soil
 Date Collected: 10.10.19 09.20

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.13.19 23.41	U	1
Toluene	108-88-3	<0.00499	0.00499	mg/kg	10.13.19 23.41	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.13.19 23.41	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.13.19 23.41	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.13.19 23.41	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.13.19 23.41	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.13.19 23.41	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	103		%	53-142	10.13.19 23.41	
1,2-Dichloroethane-D4	17060-07-0	100		%	53-150	10.13.19 23.41	
Toluene-D8	2037-26-5	108		%	70-130	10.13.19 23.41	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH16**
Lab Sample Id: 639761-013

Matrix: Soil
Date Collected: 10.10.19 10.10

Date Received: 10.11.19 12.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.7	10.1	mg/kg	10.14.19 22.07		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.41

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.7	49.7	mg/kg	10.15.19 16.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.7	49.7	mg/kg	10.15.19 16.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.7	49.7	mg/kg	10.15.19 16.17	U	1
Total GRO-DRO	PHC628	<49.7	49.7	mg/kg	10.15.19 16.17	U	1
Total TPH	PHC635	<49.7	49.7	mg/kg	10.15.19 16.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	10.15.19 16.17	
o-Terphenyl	84-15-1	92	%	70-135	10.15.19 16.17	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH16**
 Lab Sample Id: 639761-013

Matrix: Soil
 Date Collected: 10.10.19 10.10

Date Received: 10.11.19 12.35
 Sample Depth: 3 ft

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: CRL

% Moisture:

Analyst: CRL

Date Prep: 10.13.19 16.30

Basis: Wet Weight

Seq Number: 3104115

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	10.13.19 23.59	U	1
Toluene	108-88-3	<0.00498	0.00498	mg/kg	10.13.19 23.59	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	10.13.19 23.59	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	10.13.19 23.59	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	10.13.19 23.59	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	10.13.19 23.59	U	1
Total BTEX		<0.000996	0.000996	mg/kg	10.13.19 23.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	102	%	53-142	10.13.19 23.59	
1,2-Dichloroethane-D4	17060-07-0	101	%	53-150	10.13.19 23.59	
Toluene-D8	2037-26-5	107	%	70-130	10.13.19 23.59	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH16A**
 Lab Sample Id: 639761-014

Matrix: Soil
 Date Collected: 10.10.19 10.20

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.2	10.2	mg/kg	10.14.19 22.44	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.44

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.15.19 16.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.15.19 16.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.15.19 16.17	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.15.19 16.17	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.15.19 16.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.15.19 16.17	
o-Terphenyl	84-15-1	101	%	70-135	10.15.19 16.17	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH16A**
 Lab Sample Id: 639761-014

Matrix: Soil
 Date Collected: 10.10.19 10.20

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.13.19 22.48	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	10.13.19 22.48	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.13.19 22.48	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.13.19 22.48	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.13.19 22.48	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.13.19 22.48	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.13.19 22.48	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	95		%	53-142	10.13.19 22.48	
1,2-Dichloroethane-D4	17060-07-0	96		%	53-150	10.13.19 22.48	
Toluene-D8	2037-26-5	99		%	70-130	10.13.19 22.48	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH17**
Lab Sample Id: 639761-015

Matrix: Soil
Date Collected: 10.10.19 10.40

Date Received: 10.11.19 12.35
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	82.1	10.1	mg/kg	10.14.19 22.56		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.47

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.15.19 18.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.15.19 18.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.15.19 18.08	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.15.19 18.08	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.15.19 18.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.15.19 18.08	
o-Terphenyl	84-15-1	93	%	70-135	10.15.19 18.08	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH17**
 Lab Sample Id: 639761-015

Matrix: Soil
 Date Collected: 10.10.19 10.40

Date Received: 10.11.19 12.35
 Sample Depth: 1 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.14.19 00.16	U	1
Toluene	108-88-3	<0.00501	0.00501	mg/kg	10.14.19 00.16	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.14.19 00.16	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.14.19 00.16	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.14.19 00.16	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.14.19 00.16	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.14.19 00.16	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	97		%	53-142	10.14.19 00.16	
1,2-Dichloroethane-D4	17060-07-0	98		%	53-150	10.14.19 00.16	
Toluene-D8	2037-26-5	104		%	70-130	10.14.19 00.16	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH17A**
 Lab Sample Id: 639761-016

Matrix: Soil
 Date Collected: 10.10.19 11.00

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	10.14.19 23.09	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.50

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.15.19 11.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.15.19 11.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.15.19 11.51	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.15.19 11.51	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.15.19 11.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.15.19 11.51	
o-Terphenyl	84-15-1	96	%	70-135	10.15.19 11.51	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH17A**
 Lab Sample Id: 639761-016

Matrix: Soil
 Date Collected: 10.10.19 11.00

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.14.19 00.34	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	10.14.19 00.34	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.14.19 00.34	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.14.19 00.34	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.14.19 00.34	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.14.19 00.34	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.14.19 00.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	98	%	53-142	10.14.19 00.34	
1,2-Dichloroethane-D4	17060-07-0	102	%	53-150	10.14.19 00.34	
Toluene-D8	2037-26-5	103	%	70-130	10.14.19 00.34	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH18**
Lab Sample Id: 639761-017

Matrix: Soil
Date Collected: 10.10.19 11.10

Date Received: 10.11.19 12.35
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.1	9.96	mg/kg	10.14.19 23.21		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.53

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.15.19 18.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.15.19 18.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.15.19 18.27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.15.19 18.27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.15.19 18.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	10.15.19 18.27	
o-Terphenyl	84-15-1	86	%	70-135	10.15.19 18.27	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH18**
 Lab Sample Id: 639761-017

Matrix: Soil
 Date Collected: 10.10.19 11.10

Date Received: 10.11.19 12.35
 Sample Depth: 1 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	10.14.19 00.52	U	1
Toluene	108-88-3	<0.00497	0.00497	mg/kg	10.14.19 00.52	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	10.14.19 00.52	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	10.14.19 00.52	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	10.14.19 00.52	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	10.14.19 00.52	U	1
Total BTEX		<0.000994	0.000994	mg/kg	10.14.19 00.52	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	100		%	53-142	10.14.19 00.52	
1,2-Dichloroethane-D4	17060-07-0	98		%	53-150	10.14.19 00.52	
Toluene-D8	2037-26-5	103		%	70-130	10.14.19 00.52	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH18A**
Lab Sample Id: 639761-018

Matrix: Soil
Date Collected: 10.10.19 11.30

Date Received: 10.11.19 12.35
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	10.14.19 23.33	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.56

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.15.19 18.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.15.19 18.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.15.19 18.46	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.15.19 18.46	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.15.19 18.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.15.19 18.46	
o-Terphenyl	84-15-1	92	%	70-135	10.15.19 18.46	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH18A**
 Lab Sample Id: 639761-018

Matrix: Soil
 Date Collected: 10.10.19 11.30

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.14.19 01.10	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	10.14.19 01.10	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.14.19 01.10	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.14.19 01.10	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.14.19 01.10	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.14.19 01.10	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.14.19 01.10	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	100		%	53-142	10.14.19 01.10	
1,2-Dichloroethane-D4	17060-07-0	99		%	53-150	10.14.19 01.10	
Toluene-D8	2037-26-5	103		%	70-130	10.14.19 01.10	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH19**
Lab Sample Id: 639761-019

Matrix: Soil
Date Collected: 10.10.19 12.10

Date Received: 10.11.19 12.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	10.14.19 23.46	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 14.59

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.15.19 19.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.15.19 19.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.15.19 19.05	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.15.19 19.05	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.15.19 19.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.15.19 19.05	
o-Terphenyl	84-15-1	92	%	70-135	10.15.19 19.05	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH19**
 Lab Sample Id: 639761-019

Matrix: Soil
 Date Collected: 10.10.19 12.10

Date Received: 10.11.19 12.35
 Sample Depth: 3 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.14.19 01.28	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	10.14.19 01.28	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.14.19 01.28	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.14.19 01.28	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.14.19 01.28	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.14.19 01.28	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.14.19 01.28	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	99		%	53-142	10.14.19 01.28	
1,2-Dichloroethane-D4	17060-07-0	100		%	53-150	10.14.19 01.28	
Toluene-D8	2037-26-5	104		%	70-130	10.14.19 01.28	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH19A**
Lab Sample Id: 639761-020

Matrix: Soil
Date Collected: 10.10.19 12.20

Date Received: 10.11.19 12.35
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104259

Date Prep: 10.14.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.6	9.84	mg/kg	10.14.19 23.58		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104281

Date Prep: 10.14.19 15.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.15.19 19.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.15.19 19.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.15.19 19.24	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.15.19 19.24	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.15.19 19.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	10.15.19 19.24	
o-Terphenyl	84-15-1	90	%	70-135	10.15.19 19.24	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH19A**
 Lab Sample Id: 639761-020

Matrix: Soil
 Date Collected: 10.10.19 12.20

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	10.14.19 01.45	U	1
Toluene	108-88-3	<0.00497	0.00497	mg/kg	10.14.19 01.45	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	10.14.19 01.45	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	10.14.19 01.45	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	10.14.19 01.45	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	10.14.19 01.45	U	1
Total BTEX		<0.000994	0.000994	mg/kg	10.14.19 01.45	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	97		%	53-142	10.14.19 01.45	
1,2-Dichloroethane-D4	17060-07-0	97		%	53-150	10.14.19 01.45	
Toluene-D8	2037-26-5	101		%	70-130	10.14.19 01.45	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH20**
Lab Sample Id: 639761-021

Matrix: Soil
Date Collected: 10.10.19 13.05

Date Received: 10.11.19 12.35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104265

Date Prep: 10.14.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.7	9.98	mg/kg	10.14.19 19.17		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104485

Date Prep: 10.14.19 15.14

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.15.19 18.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.15.19 18.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.15.19 18.27	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.15.19 18.27	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.15.19 18.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.15.19 18.27	
o-Terphenyl	84-15-1	99	%	70-135	10.15.19 18.27	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH20**
 Lab Sample Id: 639761-021

Matrix: Soil
 Date Collected: 10.10.19 13.05

Date Received: 10.11.19 12.35
 Sample Depth: 2 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.14.19 02.03	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	10.14.19 02.03	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.14.19 02.03	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.14.19 02.03	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.14.19 02.03	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.14.19 02.03	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.14.19 02.03	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	100		%	53-142	10.14.19 02.03	
1,2-Dichloroethane-D4	17060-07-0	103		%	53-150	10.14.19 02.03	
Toluene-D8	2037-26-5	101		%	70-130	10.14.19 02.03	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH20A**
 Lab Sample Id: 639761-022

Matrix: Soil
 Date Collected: 10.10.19 13.20

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104265

Date Prep: 10.14.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.6	10.2	mg/kg	10.14.19 19.50		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104485

Date Prep: 10.14.19 15.23

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.15.19 19.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.15.19 19.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.15.19 19.24	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.15.19 19.24	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.15.19 19.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	10.15.19 19.24	
o-Terphenyl	84-15-1	98	%	70-135	10.15.19 19.24	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH20A**
 Lab Sample Id: 639761-022

Matrix: Soil
 Date Collected: 10.10.19 13.20

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.14.19 02.21	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	10.14.19 02.21	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.14.19 02.21	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.14.19 02.21	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.14.19 02.21	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.14.19 02.21	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.14.19 02.21	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	103		%	53-142	10.14.19 02.21	
1,2-Dichloroethane-D4	17060-07-0	103		%	53-150	10.14.19 02.21	
Toluene-D8	2037-26-5	104		%	70-130	10.14.19 02.21	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH21**
 Lab Sample Id: 639761-023

Matrix: Soil
 Date Collected: 10.10.19 13.40

Date Received: 10.11.19 12.35
 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104265

Date Prep: 10.14.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.6	10.1	mg/kg	10.14.19 20.01		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104485

Date Prep: 10.14.19 15.26

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.15.19 19.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.15.19 19.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.15.19 19.42	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.15.19 19.42	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.15.19 19.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	10.15.19 19.42	
o-Terphenyl	84-15-1	92	%	70-135	10.15.19 19.42	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH21**
 Lab Sample Id: 639761-023

Matrix: Soil
 Date Collected: 10.10.19 13.40

Date Received: 10.11.19 12.35
 Sample Depth: 1 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.14.19 02.39	U	1
Toluene	108-88-3	<0.00504	0.00504	mg/kg	10.14.19 02.39	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.14.19 02.39	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	10.14.19 02.39	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.14.19 02.39	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.14.19 02.39	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.14.19 02.39	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	103		%	53-142	10.14.19 02.39	
1,2-Dichloroethane-D4	17060-07-0	107		%	53-150	10.14.19 02.39	
Toluene-D8	2037-26-5	104		%	70-130	10.14.19 02.39	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH21A**
Lab Sample Id: 639761-024

Matrix: Soil
Date Collected: 10.10.19 14.00

Date Received: 10.11.19 12.35
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104265

Date Prep: 10.14.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.6	9.90	mg/kg	10.14.19 20.13		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104485

Date Prep: 10.14.19 15.29

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.15.19 20.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.15.19 20.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.15.19 20.01	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.15.19 20.01	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.15.19 20.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	10.15.19 20.01	
o-Terphenyl	84-15-1	96	%	70-135	10.15.19 20.01	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH21A**
 Lab Sample Id: 639761-024

Matrix: Soil
 Date Collected: 10.10.19 14.00

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: CRL

% Moisture:

Analyst: CRL

Date Prep: 10.13.19 16.30

Basis: Wet Weight

Seq Number: 3104115

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	10.14.19 02.56	U	1
Toluene	108-88-3	<0.00498	0.00498	mg/kg	10.14.19 02.56	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	10.14.19 02.56	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	10.14.19 02.56	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	10.14.19 02.56	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	10.14.19 02.56	U	1
Total BTEX		<0.000996	0.000996	mg/kg	10.14.19 02.56	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	100		%	53-142	10.14.19 02.56	
1,2-Dichloroethane-D4	17060-07-0	102		%	53-150	10.14.19 02.56	
Toluene-D8	2037-26-5	99		%	70-130	10.14.19 02.56	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH22**
Lab Sample Id: 639761-025

Matrix: Soil
Date Collected: 10.10.19 14.25

Date Received: 10.11.19 12.35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104265

Date Prep: 10.14.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.9	9.98	mg/kg	10.14.19 20.24		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104485

Date Prep: 10.14.19 15.32

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.15.19 20.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.15.19 20.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.15.19 20.20	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.15.19 20.20	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.15.19 20.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	10.15.19 20.20	
o-Terphenyl	84-15-1	97	%	70-135	10.15.19 20.20	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH22**
 Lab Sample Id: 639761-025

Matrix: Soil
 Date Collected: 10.10.19 14.25

Date Received: 10.11.19 12.35
 Sample Depth: 2 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.14.19 03.14	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	10.14.19 03.14	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.14.19 03.14	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.14.19 03.14	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.14.19 03.14	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.14.19 03.14	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.14.19 03.14	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	101		%	53-142	10.14.19 03.14	
1,2-Dichloroethane-D4	17060-07-0	100		%	53-150	10.14.19 03.14	
Toluene-D8	2037-26-5	100		%	70-130	10.14.19 03.14	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH22A**
Lab Sample Id: 639761-026

Matrix: Soil
Date Collected: 10.10.19 14.40

Date Received: 10.11.19 12.35
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104265

Date Prep: 10.14.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.5	9.96	mg/kg	10.14.19 20.58		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104485

Date Prep: 10.14.19 15.35

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.5	49.5	mg/kg	10.15.19 19.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.5	49.5	mg/kg	10.15.19 19.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.5	49.5	mg/kg	10.15.19 19.42	U	1
Total GRO-DRO	PHC628	<49.5	49.5	mg/kg	10.15.19 19.42	U	1
Total TPH	PHC635	<49.5	49.5	mg/kg	10.15.19 19.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	10.15.19 19.42	
o-Terphenyl	84-15-1	82	%	70-135	10.15.19 19.42	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH22A**
 Lab Sample Id: 639761-026

Matrix: Soil
 Date Collected: 10.10.19 14.40

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.14.19 03.32	U	1
Toluene	108-88-3	<0.00499	0.00499	mg/kg	10.14.19 03.32	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.14.19 03.32	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.14.19 03.32	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.14.19 03.32	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.14.19 03.32	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.14.19 03.32	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	100		%	53-142	10.14.19 03.32	
1,2-Dichloroethane-D4	17060-07-0	102		%	53-150	10.14.19 03.32	
Toluene-D8	2037-26-5	101		%	70-130	10.14.19 03.32	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH23**
Lab Sample Id: 639761-027

Matrix: Soil
Date Collected: 10.10.19 15.00

Date Received: 10.11.19 12.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104265

Date Prep: 10.14.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.7	9.98	mg/kg	10.14.19 21.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104485

Date Prep: 10.14.19 15.38

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.15.19 20.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.15.19 20.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.15.19 20.01	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.15.19 20.01	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.15.19 20.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	10.15.19 20.01	
o-Terphenyl	84-15-1	85	%	70-135	10.15.19 20.01	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH23**
 Lab Sample Id: 639761-027

Matrix: Soil
 Date Collected: 10.10.19 15.00

Date Received: 10.11.19 12.35
 Sample Depth: 3 ft

Analytical Method: BTEX by SW 8260C

Tech: CRL

Analyst: CRL

Seq Number: 3104115

Date Prep: 10.13.19 16.30

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.14.19 03.50	U	1
Toluene	108-88-3	<0.00503	0.00503	mg/kg	10.14.19 03.50	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.14.19 03.50	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.14.19 03.50	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.14.19 03.50	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.14.19 03.50	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.14.19 03.50	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	101		%	53-142	10.14.19 03.50	
1,2-Dichloroethane-D4	17060-07-0	104		%	53-150	10.14.19 03.50	
Toluene-D8	2037-26-5	101		%	70-130	10.14.19 03.50	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH23A**
 Lab Sample Id: 639761-028

Matrix: Soil
 Date Collected: 10.10.19 15.10

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3104265

Date Prep: 10.14.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.2	10.0	mg/kg	10.14.19 21.20		1

Analytical Method: TPH by SW8015 Mod

Tech: DRU

Analyst: ISU

Seq Number: 3104485

Date Prep: 10.14.19 15.41

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.15.19 20.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.15.19 20.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.15.19 20.20	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.15.19 20.20	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.15.19 20.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	10.15.19 20.20	
o-Terphenyl	84-15-1	85	%	70-135	10.15.19 20.20	



Certificate of Analytical Results 639761

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH23A**
 Lab Sample Id: 639761-028

Matrix: Soil
 Date Collected: 10.10.19 15.10

Date Received: 10.11.19 12.35
 Sample Depth: 6 ft

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: CRL

% Moisture:

Analyst: CRL

Date Prep: 10.13.19 16.30

Basis: Wet Weight

Seq Number: 3104115

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.14.19 04.07	U	1
Toluene	108-88-3	<0.00503	0.00503	mg/kg	10.14.19 04.07	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.14.19 04.07	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.14.19 04.07	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.14.19 04.07	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.14.19 04.07	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.14.19 04.07	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	98		%	53-142	10.14.19 04.07	
1,2-Dichloroethane-D4	17060-07-0	96		%	53-150	10.14.19 04.07	
Toluene-D8	2037-26-5	101		%	70-130	10.14.19 04.07	



Flagging Criteria

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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3104259

MB Sample Id: 7688073-1-BLK

Matrix: Solid

LCS Sample Id: 7688073-1-BKS

Prep Method: E300P

Date Prep: 10.14.19

LCSD Sample Id: 7688073-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	100	101	101	101	101	80-120	0	20	mg/kg	10.14.19 17:58	

Analytical Method: Chloride by EPA 300

Seq Number: 3104265

MB Sample Id: 7688076-1-BLK

Matrix: Solid

LCS Sample Id: 7688076-1-BKS

Prep Method: E300P

Date Prep: 10.14.19

LCSD Sample Id: 7688076-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	100	101	101	101	101	80-120	0	20	mg/kg	10.14.19 18:54	

Analytical Method: Chloride by EPA 300

Seq Number: 3104259

Parent Sample Id: 639761-001

Matrix: Soil

MS Sample Id: 639761-001 S

Prep Method: E300P

Date Prep: 10.14.19

MSD Sample Id: 639761-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	288	100	374	86	374	86	80-120	0	20	mg/kg	10.14.19 18:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3104259

Parent Sample Id: 639761-011

Matrix: Soil

MS Sample Id: 639761-011 S

Prep Method: E300P

Date Prep: 10.14.19

MSD Sample Id: 639761-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.0	100	102	92	102	92	80-120	0	20	mg/kg	10.14.19 21:29	

Analytical Method: Chloride by EPA 300

Seq Number: 3104265

Parent Sample Id: 639761-021

Matrix: Soil

MS Sample Id: 639761-021 S

Prep Method: E300P

Date Prep: 10.14.19

MSD Sample Id: 639761-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	30.7	100	128	97	128	97	80-120	0	20	mg/kg	10.14.19 19:28	

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104281

MB Sample Id: 7688085-1-BLK

Matrix: Solid

LCS Sample Id: 7688085-1-BKS

Prep Method: SW8015P

Date Prep: 10.14.19

LCSD Sample Id: 7688085-1-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)	<10.0	1000	1200	120	1180	118	70-135	2	35	mg/kg	10.15.19 10:18	
Diesel Range Organics (DRO)	<10.0	1000	1240	124	1190	119	70-135	4	35	mg/kg	10.15.19 10:18	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	98		106		101		70-135	%	10.15.19 10:18			
o-Terphenyl	105		101		95		70-135	%	10.15.19 10:18			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104485

MB Sample Id: 7688086-1-BLK

Matrix: Solid

LCS Sample Id: 7688086-1-BKS

Prep Method: SW8015P

Date Prep: 10.14.19

LCSD Sample Id: 7688086-1-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)	<10.0	1000	1110	111	1240	124	70-135	11	35	mg/kg	10.15.19 17:49	
Diesel Range Organics (DRO)	<10.0	1000	1150	115	1250	125	70-135	8	35	mg/kg	10.15.19 17:49	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	98		99		115		70-135	%	10.15.19 17:49			
o-Terphenyl	100		94		110		70-135	%	10.15.19 17:49			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104281

Matrix: Solid

MB Sample Id: 7688085-1-BLK

Prep Method: SW8015P

Date Prep: 10.14.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.14.19 19:20	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104485

Matrix: Solid

MB Sample Id: 7688086-1-BLK

Prep Method: SW8015P

Date Prep: 10.14.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.15.19 10:55	

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104281

Parent Sample Id: 639761-001

Matrix: Soil

MS Sample Id: 639761-001 S

Prep Method: SW8015P

Date Prep: 10.14.19

MSD Sample Id: 639761-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	995	1140	115	1180	117	70-135	3	35	mg/kg	10.14.19 20:34	
Diesel Range Organics (DRO)	<49.8	995	1160	117	1180	117	70-135	2	35	mg/kg	10.14.19 20:34	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		99		70-135	%	10.14.19 20:34
o-Terphenyl	92		91		70-135	%	10.14.19 20:34

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104485

Parent Sample Id: 639761-021

Matrix: Soil

MS Sample Id: 639761-021 S

Prep Method: SW8015P

Date Prep: 10.14.19

MSD Sample Id: 639761-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	1130	112	1090	109	70-135	4	35	mg/kg	10.15.19 18:46	
Diesel Range Organics (DRO)	<10.1	1010	1180	117	1140	114	70-135	3	35	mg/kg	10.15.19 18:46	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		99		70-135	%	10.15.19 18:46
o-Terphenyl	97		93		70-135	%	10.15.19 18:46

Analytical Method: BTEX by SW 8260C

Seq Number: 3104088

MB Sample Id: 7687999-1-BLK

Matrix: Solid

LCS Sample Id: 7687999-1-BKS

Prep Method: SW5035A

Date Prep: 10.13.19

LCSD Sample Id: 7687999-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0500	0.0447	89	0.0419	84	62-132	6	25	mg/kg	10.13.19 10:40	
Toluene	<0.00500	0.0500	0.0473	95	0.0459	92	66-124	3	25	mg/kg	10.13.19 10:40	
Ethylbenzene	<0.00100	0.0500	0.0462	92	0.0442	88	71-134	4	25	mg/kg	10.13.19 10:40	
m,p-Xylenes	<0.00200	0.100	0.0909	91	0.0873	87	69-128	4	25	mg/kg	10.13.19 10:40	
o-Xylene	<0.00100	0.0500	0.0480	96	0.0446	89	72-131	7	25	mg/kg	10.13.19 10:40	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	97		101		96		53-142	%	10.13.19 10:40
1,2-Dichloroethane-D4	98		98		93		53-150	%	10.13.19 10:40
Toluene-D8	101		102		99		70-130	%	10.13.19 10:40

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: BTEX by SW 8260C

Seq Number: 3104115

MB Sample Id: 7688009-1-BLK

Matrix: Solid

LCS Sample Id: 7688009-1-BKS

Prep Method: SW5035A

Date Prep: 10.13.19

LCSD Sample Id: 7688009-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0500	0.0467	93	0.0455	91	62-132	3	25	mg/kg	10.13.19 20:45	
Toluene	<0.00500	0.0500	0.0506	101	0.0489	98	66-124	3	25	mg/kg	10.13.19 20:45	
Ethylbenzene	<0.00100	0.0500	0.0490	98	0.0474	95	71-134	3	25	mg/kg	10.13.19 20:45	
m,p-Xylenes	<0.00200	0.100	0.0952	95	0.0928	93	69-128	3	25	mg/kg	10.13.19 20:45	
o-Xylene	<0.00100	0.0500	0.0501	100	0.0503	101	72-131	0	25	mg/kg	10.13.19 20:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	99		95		97		53-142	%	10.13.19 20:45
1,2-Dichloroethane-D4	100		88		94		53-150	%	10.13.19 20:45
Toluene-D8	107		102		104		70-130	%	10.13.19 20:45

Analytical Method: BTEX by SW 8260C

Seq Number: 3104088

Parent Sample Id: 639761-001

Matrix: Soil

MS Sample Id: 639761-001 S

Prep Method: SW5035A

Date Prep: 10.13.19

MSD Sample Id: 639761-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000998	0.0499	0.0393	79	0.0401	80	62-132	2	25	mg/kg	10.13.19 11:17	
Toluene	<0.00499	0.0499	0.0415	83	0.0443	88	66-124	7	25	mg/kg	10.13.19 11:17	
Ethylbenzene	<0.000998	0.0499	0.0399	80	0.0426	85	71-134	7	25	mg/kg	10.13.19 11:17	
m,p-Xylenes	<0.00200	0.0998	0.0792	79	0.0830	82	69-128	5	25	mg/kg	10.13.19 11:17	
o-Xylene	<0.000998	0.0499	0.0412	83	0.0429	85	72-131	4	25	mg/kg	10.13.19 11:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	99		95		53-142	%	10.13.19 11:17
1,2-Dichloroethane-D4	94		91		53-150	%	10.13.19 11:17
Toluene-D8	99		100		70-130	%	10.13.19 11:17

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: BTEX by SW 8260C

Seq Number: 3104115

Parent Sample Id: 639761-014

Matrix: Soil

MS Sample Id: 639761-014 S

Prep Method: SW5035A

Date Prep: 10.13.19

MSD Sample Id: 639761-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.0503	0.0450	89	0.0397	79	62-132	13	25	mg/kg	10.13.19 21:20	
Toluene	<0.00503	0.0503	0.0474	94	0.0430	85	66-124	10	25	mg/kg	10.13.19 21:20	
Ethylbenzene	<0.00101	0.0503	0.0458	91	0.0419	83	71-134	9	25	mg/kg	10.13.19 21:20	
m,p-Xylenes	<0.00201	0.101	0.0899	89	0.0810	80	69-128	10	25	mg/kg	10.13.19 21:20	
o-Xylene	<0.00101	0.0503	0.0474	94	0.0407	81	72-131	15	25	mg/kg	10.13.19 21:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	99		95		53-142	%	10.13.19 21:20
1,2-Dichloroethane-D4	89		92		53-150	%	10.13.19 21:20
Toluene-D8	102		98		70-130	%	10.13.19 21:20

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

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

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

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



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 (770-449-8600) Tampa, FL (813-620-2000)

Chain of Custody

Work Order No:

1039761

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Page 1 of 3

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

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

ANALYSIS REQUEST

Work Order Notes

Project Name:	Elk Wellbore II State Battery	Turn Around	
Project Number:	012918147	Routine ☐	
P.O. Number:	288-4967	Rush: 2 day	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes ☐ No	Well loc:	☒ Yes ☐ No
Temperature (°C):	1.2	Thermometer ID		
Received intact:	☒ Yes ☐ No	T-NM-207		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:		
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:		

Number of Containers

TPH (EPA 8015)

BTEX (EPA 8-8021)

Chloride (EPA 308.0)

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 308.0)	Analysis Request	Work Order Notes
PH10	S	10/09/19	10:22	3'	1	X	X	X		
PH10A			10:30	4'		X	X	X		
PH11			11:00	1'		X	X	X		
PH11A			11:15	4'		X	X	X		
PH12			11:50	4'		X	X	X		
PH12A			12:15	6'		X	X	X		
PH13			13:10	3'		X	X	X		
PH13A			13:20	6'		X	X	X		
PH14			14:40	1'		X	X	X		
PH14A			14:50	6'		X	X	X		

Sample Comments

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

direct

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca C 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 / SPL 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 / Hg

Note: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Robert McAfee</i>	<i>Dana Boyer</i>	10/11/19 @ 12:15	<i>Dana Boyer</i>	<i>Robert McAfee</i>	10-11-19



Chain of Custody

Work Order No: 10397-11

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432-704-5440) El Paso, TX (915) 565-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrei
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	dmoir@xenco.com kmlitrei@xenco.com
Project Name:	Elk Hollow State Battery	Turn Around	Routine ☐ Rush: 2 day
Project Number:	01291847	Due Date:	
P.O. Number:	2PR-4967		
Sampler's Name:	Robert McAfee		

SAMPLE RECEIPT				ANALYSIS REQUEST				Work Order Notes		
Temperature (°C):	Temp Blank:	Yes	No	Well loc:	Yes	No	TAT starts the day received by the lab, if received by 4:30pm			
Received intact:	Yes	No								
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:	Sample Comments					
Sample Custody Seals:	Yes	No	N/A	Total Containers:						
Sample Identification:		Matrix	Date Sampled	Time Sampled	Depth	Number of Containers				
PH15	S	10/10/19	0910	3'	1	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)		
PH15A			0920	6'	1	X	X	X		
PH16			1010	3'	1	X	X	X		
PH16A			1020	6'	1	X	X	X		
PH17			1010	1'	1	X	X	X		
PH17A			1100	6'	1	X	X	X		
PH18			1110	1'	1	X	X	X		
PH18A			1130	6'	1	X	X	X		
PH19			1210	3'	1	X	X	X		
PH19A			1220	6'	1	X	X	X		

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

Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	10/11/2019	<i>[Signature]</i>	<i>[Signature]</i>	10/11/2019



Chain of Custody

Work Order No: 10397-21

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 (770-445-8800) Tampa, FL (813-820-2000)

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Page 3 of 3

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	dmair@xto.com kmlitrel@xto.com

Project Name:	Elk Wellbore / State Entry	Turn Around	Routine ☐ Rush: 2 day
Project Number:	012918147	Due Date:	
P.O. Number:	2RP-4967		
Sampler's Name:	Robert McAlfee		

Temperature (°C):	12	Temp Blank:	Yes No	Wet Ice:	Yes No
Received Intact:	Yes No				
Cooler Custody Seals:	Yes No N/A	Correction Factor:			
Sample Custody Seals:	Yes No N/A	Total Containers:			

SAMPLE RECEIPT

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth

PH20	S	10/10/19	1305	2'
PH20A			1320	6'
PH21			1340	1'
PH21A			1400	6'
PH22			1425	2'
PH22A			1440	6'
PH23			1500	3'
PH23A			1510	6'

Number of Containers

TPH (EPA 8015)

BTEX (EPA 0-8021)

Chloride (EPA 300.0)

ANALYSIS REQUEST

Work Order Notes

Sample Comments

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

discuss

Total 200.7 / 6010 200.8 / 6020:

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

1631 / 245.1 / 7470 / 7471 : Hg

Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions to Xenco. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Inter-Office Shipment

IOS Number : **49948**

Date/Time: 10.11.2019

Created by: Elizabeth Mcclellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Houston**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639761-001	S	PH10	10.09.2019 10:22	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	
639761-001	S	PH10	10.09.2019 10:22	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-001	S	PH10	10.09.2019 10:22	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-002	S	PH10A	10.09.2019 10:30	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	
639761-002	S	PH10A	10.09.2019 10:30	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-002	S	PH10A	10.09.2019 10:30	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-003	S	PH11	10.09.2019 11:00	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-003	S	PH11	10.09.2019 11:00	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	
639761-003	S	PH11	10.09.2019 11:00	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-004	S	PH11A	10.09.2019 11:15	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-004	S	PH11A	10.09.2019 11:15	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-004	S	PH11A	10.09.2019 11:15	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	
639761-005	S	PH12	10.09.2019 11:50	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-005	S	PH12	10.09.2019 11:50	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-005	S	PH12	10.09.2019 11:50	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	
639761-006	S	PH12A	10.09.2019 12:15	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-006	S	PH12A	10.09.2019 12:15	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	
639761-006	S	PH12A	10.09.2019 12:15	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-007	S	PH13	10.09.2019 13:10	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-007	S	PH13	10.09.2019 13:10	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	
639761-007	S	PH13	10.09.2019 13:10	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-008	S	PH13A	10.09.2019 13:20	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-008	S	PH13A	10.09.2019 13:20	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-008	S	PH13A	10.09.2019 13:20	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	
639761-009	S	PH14	10.09.2019 14:40	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	

Inter-Office Shipment

IOS Number : **49948**

Date/Time: 10.11.2019

Created by: Elizabeth Mcclellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Houston**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639761-009	S	PH14	10.09.2019 14:40	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-009	S	PH14	10.09.2019 14:40	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-010	S	PH14A	10.09.2019 14:50	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.23.2019	JKR	BZ BZME EBZ XYLENE	
639761-010	S	PH14A	10.09.2019 14:50	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.23.2019	JKR	GRO-DRO PHCC10C28	
639761-010	S	PH14A	10.09.2019 14:50	E300_CL	Chloride by EPA 300	10.15.2019	04.06.2020	JKR	CL	
639761-011	S	PH15	10.10.2019 09:10	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-011	S	PH15	10.10.2019 09:10	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-011	S	PH15	10.10.2019 09:10	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-012	S	PH15A	10.10.2019 09:20	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-012	S	PH15A	10.10.2019 09:20	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-012	S	PH15A	10.10.2019 09:20	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-013	S	PH16	10.10.2019 10:10	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-013	S	PH16	10.10.2019 10:10	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-013	S	PH16	10.10.2019 10:10	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-014	S	PH16A	10.10.2019 10:20	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-014	S	PH16A	10.10.2019 10:20	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-014	S	PH16A	10.10.2019 10:20	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-015	S	PH17	10.10.2019 10:40	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-015	S	PH17	10.10.2019 10:40	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-015	S	PH17	10.10.2019 10:40	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-016	S	PH17A	10.10.2019 11:00	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-016	S	PH17A	10.10.2019 11:00	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-016	S	PH17A	10.10.2019 11:00	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-017	S	PH18	10.10.2019 11:10	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-017	S	PH18	10.10.2019 11:10	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	

Inter Office Shipment or Sample Comments:

Inter-Office Shipment

IOS Number : **49948**

Date/Time: 10.11.2019

Created by: Elizabeth Mcclellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Houston**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639761-017	S	PH18	10.10.2019 11:10	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-018	S	PH18A	10.10.2019 11:30	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-018	S	PH18A	10.10.2019 11:30	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-018	S	PH18A	10.10.2019 11:30	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-019	S	PH19	10.10.2019 12:10	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-019	S	PH19	10.10.2019 12:10	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-019	S	PH19	10.10.2019 12:10	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-020	S	PH19A	10.10.2019 12:20	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-020	S	PH19A	10.10.2019 12:20	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-020	S	PH19A	10.10.2019 12:20	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-021	S	PH20	10.10.2019 13:05	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-021	S	PH20	10.10.2019 13:05	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-021	S	PH20	10.10.2019 13:05	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-022	S	PH20A	10.10.2019 13:20	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-022	S	PH20A	10.10.2019 13:20	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-022	S	PH20A	10.10.2019 13:20	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-023	S	PH21	10.10.2019 13:40	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-023	S	PH21	10.10.2019 13:40	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-023	S	PH21	10.10.2019 13:40	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-024	S	PH21A	10.10.2019 14:00	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-024	S	PH21A	10.10.2019 14:00	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-024	S	PH21A	10.10.2019 14:00	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-025	S	PH22	10.10.2019 14:25	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-025	S	PH22	10.10.2019 14:25	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-025	S	PH22	10.10.2019 14:25	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	

Inter Office Shipment or Sample Comments:

Relinquished By:

Received By:

Inter-Office Shipment

IOS Number : **49948**

Date/Time: 10.11.2019

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Houston**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639761-026	S	PH22A	10.10.2019 14:40	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-026	S	PH22A	10.10.2019 14:40	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-026	S	PH22A	10.10.2019 14:40	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-027	S	PH23	10.10.2019 15:00	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-027	S	PH23	10.10.2019 15:00	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	
639761-027	S	PH23	10.10.2019 15:00	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-028	S	PH23A	10.10.2019 15:10	E300_CL	Chloride by EPA 300	10.15.2019	04.07.2020	JKR	CL	
639761-028	S	PH23A	10.10.2019 15:10	SW8260CBTEX	BTEX by SW 8260C	10.15.2019	10.24.2019	JKR	BZ BZME EBZ XYLENE	
639761-028	S	PH23A	10.10.2019 15:10	SW8015MOD_NM	TPH by SW8015 Mod	10.15.2019	10.24.2019	JKR	GRO-DRO PHCC10C28	

Inter Office Shipment or Sample Comments:

Date Relinquished:



Elizabeth McClellan

10.11.2019

Date Received:

Cooler Temperature:



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 49948

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Elizabeth McClellan

Date Sent: 10.11.2019 02:51 PM

Received By: Ashly Kowalski

Date Received: 10.12.2019 09:45 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Ashly Kowalski

Date: 10.12.2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/11/2019 12:35:00 PM

Work Order #: 639761

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 10/11/2019

Checklist reviewed by:

Jessica Kramer

Date: 10/13/2019

Analytical Report 641213

for
LT Environmental, Inc.

Project Manager: Dan Moir

Elk Wallow II State Battery

2RP-4967

30-OCT-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

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

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

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



30-OCT-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **641213**

Elk Wallow II State Battery

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) 641213. 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. 641213 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 641213****LT Environmental, Inc., Arvada, CO**

Elk Wallow II State Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH24	S	10-25-19 10:02	1 ft	641213-001
PH24A	S	10-25-19 10:40	8 ft	641213-002
PH25	S	10-25-19 11:25	6 ft	641213-003
PH25A	S	10-25-19 11:50	8 ft	641213-004
PH26	S	10-25-19 12:45	2 ft	641213-005
PH26A	S	10-25-19 13:05	8 ft	641213-006
PH27	S	10-25-19 13:35	4 ft	641213-007
PH27A	S	10-25-19 14:00	7 ft	641213-008
PH28	S	10-25-19 14:15	3 ft	641213-009
PH28A	S	10-25-19 14:40	8 ft	641213-010
PH29	S	10-25-19 15:00	6 ft	641213-011
PH29A	S	10-25-19 15:05	8 ft	641213-012
PH30	S	10-25-19 15:40	6 ft	641213-013
PH30A	S	10-25-19 15:45	8 ft	641213-014



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow II State Battery

Project ID: 2RP-4967
Work Order Number(s): 641213

Report Date: 30-OCT-19
Date Received: 10/28/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3105680 BTEX by EPA 8021B

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

Batch: LBA-3105682 TPH by SW8015 Mod

Motor Oil Range Hydrocarbons (MRO) RPD was outside laboratory control limits.

Samples in the analytical batch are: 641213-001, -002, -003, -004, -005

Batch: LBA-3105684 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7689068-1-BKS.

Batch: LBA-3105688 BTEX by EPA 8021B

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



Certificate of Analysis Summary 641213

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 2RP-4967

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Oct-28-19 08:15 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641213-001	641213-002	641213-003	641213-004	641213-005	641213-006
	<i>Field Id:</i>	PH24	PH24A	PH25	PH25A	PH26	PH26A
	<i>Depth:</i>	1- ft	8- ft	6- ft	8- ft	2- ft	8- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-25-19 10:02	Oct-25-19 10:40	Oct-25-19 11:25	Oct-25-19 11:50	Oct-25-19 12:45	Oct-25-19 13:05
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-28-19 11:10	Oct-28-19 11:10	Oct-28-19 11:10	Oct-28-19 11:10	Oct-28-19 11:10	Oct-28-19 11:10
	<i>Analyzed:</i>	Oct-28-19 20:50	Oct-28-19 21:10	Oct-28-19 21:31	Oct-28-19 21:51	Oct-28-19 22:12	Oct-28-19 22:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000996 0.000996	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101
Toluene		<0.000996 0.000996	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101
Ethylbenzene		<0.000996 0.000996	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101
m,p-Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
o-Xylene		<0.000996 0.000996	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101
Total Xylenes		<0.000996 0.000996	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101
Total BTEX		<0.000996 0.000996	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101
Chloride by EPA 300 SUB: T104704215-19-30	<i>Extracted:</i>	Oct-29-19 14:13	Oct-29-19 14:13	Oct-29-19 14:13	Oct-29-19 14:13	Oct-29-19 14:13	Oct-29-19 14:13
	<i>Analyzed:</i>	Oct-30-19 01:09	Oct-30-19 01:21	Oct-30-19 01:34	Oct-30-19 02:35	Oct-30-19 02:47	Oct-30-19 02:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		105 10.1	130 10.1	1050 10.0	908 10.1	1410 9.96	10.5 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-28-19 14:00	Oct-28-19 14:00	Oct-28-19 14:00	Oct-28-19 14:00	Oct-28-19 14:00	Oct-28-19 14:30
	<i>Analyzed:</i>	Oct-28-19 16:08	Oct-28-19 16:08	Oct-28-19 16:28	Oct-28-19 16:28	Oct-28-19 16:48	Oct-28-19 17:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2	<50.3 50.3	<50.2 50.2	<49.9 49.9	<49.9 49.9
Diesel Range Organics (DRO)		478 50.2	<50.2 50.2	<50.3 50.3	<50.2 50.2	<49.9 49.9	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		133 50.2	<50.2 50.2	<50.3 50.3	<50.2 50.2	<49.9 49.9	<49.9 49.9
Total GRO-DRO		478 50.2	<50.2 50.2	<50.3 50.3	<50.2 50.2	<49.9 49.9	<49.9 49.9
Total TPH		611 50.2	<50.2 50.2	<50.3 50.3	<50.2 50.2	<49.9 49.9	<49.9 49.9

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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641213

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 2RP-4967

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Oct-28-19 08:15 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641213-007	641213-008	641213-009	641213-010	641213-011	641213-012
	<i>Field Id:</i>	PH27	PH27A	PH28	PH28A	PH29	PH29A
	<i>Depth:</i>	4- ft	7- ft	3- ft	8- ft	6- ft	8- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-25-19 13:35	Oct-25-19 14:00	Oct-25-19 14:15	Oct-25-19 14:40	Oct-25-19 15:00	Oct-25-19 15:05
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-28-19 11:10	Oct-28-19 11:10	Oct-28-19 11:10	Oct-28-19 17:10	Oct-28-19 17:10	Oct-28-19 17:10
	<i>Analyzed:</i>	Oct-28-19 22:52	Oct-28-19 23:13	Oct-28-19 23:33	Oct-29-19 03:25	Oct-29-19 03:46	Oct-29-19 04:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Toluene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
m,p-Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202
o-Xylene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Total BTEX		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Chloride by EPA 300 SUB: T104704215-19-30	<i>Extracted:</i>	Oct-29-19 14:13	Oct-29-19 14:13	Oct-29-19 14:13	Oct-29-19 14:13	Oct-29-19 14:13	Oct-29-19 14:13
	<i>Analyzed:</i>	Oct-30-19 03:11	Oct-30-19 03:24	Oct-30-19 03:36	Oct-30-19 03:48	Oct-30-19 04:00	Oct-30-19 04:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		704 10.1	331 10.1	393 10.1	458 10.0	20.6 10.1	44.3 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-28-19 14:30	Oct-28-19 14:30	Oct-28-19 14:30	Oct-28-19 14:30	Oct-28-19 14:30	Oct-28-19 14:30
	<i>Analyzed:</i>	Oct-28-19 18:07	Oct-28-19 18:07	Oct-28-19 18:27	Oct-28-19 18:27	Oct-28-19 18:47	Oct-28-19 18:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.3 50.3	<49.9 49.9
Diesel Range Organics (DRO)		<50.1 50.1	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.3 50.3	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.3 50.3	<49.9 49.9
Total GRO-DRO		<50.1 50.1	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.3 50.3	<49.9 49.9
Total TPH		<50.1 50.1	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.3 50.3	<49.9 49.9

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641213

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 2RP-4967

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Oct-28-19 08:15 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	641213-013	641213-014				
	Field Id:	PH30	PH30A				
	Depth:	6- ft	8- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Oct-25-19 15:40	Oct-25-19 15:45				
BTEX by EPA 8021B	Extracted:	Oct-28-19 17:10	Oct-28-19 17:10				
	Analyzed:	Oct-29-19 04:26	Oct-29-19 03:05				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00101 0.00101	<0.00101 0.00101				
Toluene		<0.00101 0.00101	<0.00101 0.00101				
Ethylbenzene		<0.00101 0.00101	<0.00101 0.00101				
m,p-Xylenes		<0.00201 0.00201	<0.00201 0.00201				
o-Xylene		<0.00101 0.00101	<0.00101 0.00101				
Total Xylenes		<0.00101 0.00101	<0.00101 0.00101				
Total BTEX		<0.00101 0.00101	<0.00101 0.00101				
Chloride by EPA 300 SUB: T104704215-19-30	Extracted:	Oct-29-19 14:13	Oct-29-19 14:13				
	Analyzed:	Oct-30-19 04:49	Oct-30-19 05:01				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		56.6 9.90	59.6 9.92				
TPH by SW8015 Mod	Extracted:	Oct-28-19 14:30	Oct-28-19 14:30				
	Analyzed:	Oct-28-19 19:07	Oct-28-19 19:07				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8				
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8				
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8				
Total GRO-DRO		<49.9 49.9	<49.8 49.8				
Total TPH		<49.9 49.9	<49.8 49.8				

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH24**
Lab Sample Id: 641213-001

Matrix: Soil
Date Collected: 10.25.19 10.02

Date Received: 10.28.19 08.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	105	10.1	mg/kg	10.30.19 01.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105682

Date Prep: 10.28.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.28.19 16.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	478	50.2	mg/kg	10.28.19 16.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	133	50.2	mg/kg	10.28.19 16.08		1
Total GRO-DRO	PHC628	478	50.2	mg/kg	10.28.19 16.08		1
Total TPH	PHC635	611	50.2	mg/kg	10.28.19 16.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	10.28.19 16.08	
o-Terphenyl	84-15-1	116	%	70-135	10.28.19 16.08	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH24**
 Lab Sample Id: 641213-001

Matrix: Soil
 Date Collected: 10.25.19 10.02

Date Received: 10.28.19 08.15
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 11.10

Basis: Wet Weight

Seq Number: 3105688

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	10.28.19 20.50	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	10.28.19 20.50	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	10.28.19 20.50	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	10.28.19 20.50	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	10.28.19 20.50	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	10.28.19 20.50	U	1
Total BTEX		<0.000996	0.000996	mg/kg	10.28.19 20.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.28.19 20.50		
4-Bromofluorobenzene	460-00-4	108	%	70-130	10.28.19 20.50		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH24A**
Lab Sample Id: 641213-002

Matrix: Soil
Date Collected: 10.25.19 10.40

Date Received: 10.28.19 08.15
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	130	10.1	mg/kg	10.30.19 01.21		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105682

Date Prep: 10.28.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.28.19 16.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.28.19 16.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.28.19 16.08	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.28.19 16.08	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.28.19 16.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.28.19 16.08	
o-Terphenyl	84-15-1	101	%	70-135	10.28.19 16.08	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH24A**
 Lab Sample Id: 641213-002

Matrix: Soil
 Date Collected: 10.25.19 10.40

Date Received: 10.28.19 08.15
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 11.10

Basis: Wet Weight

Seq Number: 3105688

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	10.28.19 21.10	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	10.28.19 21.10	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	10.28.19 21.10	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	10.28.19 21.10	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	10.28.19 21.10	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	10.28.19 21.10	U	1
Total BTEX		<0.000996	0.000996	mg/kg	10.28.19 21.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.28.19 21.10		
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.28.19 21.10		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH25**
Lab Sample Id: 641213-003

Matrix: Soil
Date Collected: 10.25.19 11.25

Date Received: 10.28.19 08.15
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1050	10.0	mg/kg	10.30.19 01.34		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105682

Date Prep: 10.28.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.28.19 16.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.28.19 16.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.28.19 16.28	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.28.19 16.28	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.28.19 16.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	10.28.19 16.28	
o-Terphenyl	84-15-1	108	%	70-135	10.28.19 16.28	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH25**
 Lab Sample Id: 641213-003

Matrix: Soil
 Date Collected: 10.25.19 11.25

Date Received: 10.28.19 08.15
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 11.10

Basis: Wet Weight

Seq Number: 3105688

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.28.19 21.31	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	10.28.19 21.31	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.28.19 21.31	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.28.19 21.31	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.28.19 21.31	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.28.19 21.31	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.28.19 21.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.28.19 21.31		
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.28.19 21.31		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH25A**
Lab Sample Id: 641213-004

Matrix: Soil
Date Collected: 10.25.19 11.50

Date Received: 10.28.19 08.15
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	908	10.1	mg/kg	10.30.19 02.35		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105682

Date Prep: 10.28.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.28.19 16.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.28.19 16.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.28.19 16.28	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.28.19 16.28	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.28.19 16.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	10.28.19 16.28	
o-Terphenyl	84-15-1	101	%	70-135	10.28.19 16.28	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH25A**
 Lab Sample Id: 641213-004

Matrix: Soil
 Date Collected: 10.25.19 11.50

Date Received: 10.28.19 08.15
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 11.10

Basis: Wet Weight

Seq Number: 3105688

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.28.19 21.51	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	10.28.19 21.51	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.28.19 21.51	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.28.19 21.51	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.28.19 21.51	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.28.19 21.51	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.28.19 21.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.28.19 21.51		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.28.19 21.51		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH26**
Lab Sample Id: 641213-005

Matrix: Soil
Date Collected: 10.25.19 12.45

Date Received: 10.28.19 08.15
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1410	9.96	mg/kg	10.30.19 02.47		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105682

Date Prep: 10.28.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 16.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 16.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 16.48	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 16.48	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 16.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	10.28.19 16.48	
o-Terphenyl	84-15-1	104	%	70-135	10.28.19 16.48	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH26**
 Lab Sample Id: 641213-005

Matrix: Soil
 Date Collected: 10.25.19 12.45

Date Received: 10.28.19 08.15
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 11.10

Basis: Wet Weight

Seq Number: 3105688

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.28.19 22.12	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.28.19 22.12	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.28.19 22.12	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.28.19 22.12	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.28.19 22.12	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.28.19 22.12	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.28.19 22.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	10.28.19 22.12		
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.28.19 22.12		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH26A**
 Lab Sample Id: 641213-006

Matrix: Soil
 Date Collected: 10.25.19 13.05

Date Received: 10.28.19 08.15
 Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.5	9.98	mg/kg	10.30.19 02.59		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105684

Date Prep: 10.28.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 17.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 17.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 17.27	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 17.27	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 17.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	10.28.19 17.27	
o-Terphenyl	84-15-1	102	%	70-135	10.28.19 17.27	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH26A**
 Lab Sample Id: 641213-006

Matrix: Soil
 Date Collected: 10.25.19 13.05

Date Received: 10.28.19 08.15
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 11.10

Basis: Wet Weight

Seq Number: 3105688

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.28.19 22.32	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	10.28.19 22.32	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.28.19 22.32	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	10.28.19 22.32	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.28.19 22.32	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.28.19 22.32	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.28.19 22.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.28.19 22.32		
4-Bromofluorobenzene	460-00-4	113	%	70-130	10.28.19 22.32		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH27**
Lab Sample Id: 641213-007

Matrix: Soil
Date Collected: 10.25.19 13.35

Date Received: 10.28.19 08.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	704	10.1	mg/kg	10.30.19 03.11		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105684

Date Prep: 10.28.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.28.19 18.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.28.19 18.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.28.19 18.07	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.28.19 18.07	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.28.19 18.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	10.28.19 18.07	
o-Terphenyl	84-15-1	106	%	70-135	10.28.19 18.07	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH27**
 Lab Sample Id: 641213-007

Matrix: Soil
 Date Collected: 10.25.19 13.35

Date Received: 10.28.19 08.15
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3105688

Prep Method: SW5030B

% Moisture:

Date Prep: 10.28.19 11.10

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.28.19 22.52	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	10.28.19 22.52	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.28.19 22.52	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	10.28.19 22.52	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.28.19 22.52	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.28.19 22.52	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.28.19 22.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.28.19 22.52		
4-Bromofluorobenzene	460-00-4	114	%	70-130	10.28.19 22.52		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH27A**
 Lab Sample Id: 641213-008

Matrix: Soil
 Date Collected: 10.25.19 14.00

Date Received: 10.28.19 08.15
 Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	331	10.1	mg/kg	10.30.19 03.24		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105684

Date Prep: 10.28.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.28.19 18.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.28.19 18.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.28.19 18.07	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.28.19 18.07	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.28.19 18.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	10.28.19 18.07	
o-Terphenyl	84-15-1	103	%	70-135	10.28.19 18.07	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH27A**
 Lab Sample Id: 641213-008

Matrix: Soil
 Date Collected: 10.25.19 14.00

Date Received: 10.28.19 08.15
 Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 11.10

Basis: Wet Weight

Seq Number: 3105688

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.28.19 23.13	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.28.19 23.13	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.28.19 23.13	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.28.19 23.13	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.28.19 23.13	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.28.19 23.13	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.28.19 23.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	10.28.19 23.13		
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.28.19 23.13		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH28**
Lab Sample Id: 641213-009

Matrix: Soil
Date Collected: 10.25.19 14.15

Date Received: 10.28.19 08.15
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	393	10.1	mg/kg	10.30.19 03.36		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105684

Date Prep: 10.28.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.28.19 18.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.28.19 18.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.28.19 18.27	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.28.19 18.27	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.28.19 18.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	10.28.19 18.27	
o-Terphenyl	84-15-1	112	%	70-135	10.28.19 18.27	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH28**
 Lab Sample Id: 641213-009

Matrix: Soil
 Date Collected: 10.25.19 14.15

Date Received: 10.28.19 08.15
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 11.10

Basis: Wet Weight

Seq Number: 3105688

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.28.19 23.33	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.28.19 23.33	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.28.19 23.33	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.28.19 23.33	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.28.19 23.33	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.28.19 23.33	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.28.19 23.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.28.19 23.33		
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.28.19 23.33		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH28A**
Lab Sample Id: 641213-010

Matrix: Soil
Date Collected: 10.25.19 14.40

Date Received: 10.28.19 08.15
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	458	10.0	mg/kg	10.30.19 03.48		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105684

Date Prep: 10.28.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.28.19 18.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.28.19 18.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.28.19 18.27	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.28.19 18.27	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.28.19 18.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	10.28.19 18.27	
o-Terphenyl	84-15-1	109	%	70-135	10.28.19 18.27	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH28A**
 Lab Sample Id: 641213-010

Matrix: Soil
 Date Collected: 10.25.19 14.40

Date Received: 10.28.19 08.15
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 17.10

Basis: Wet Weight

Seq Number: 3105680

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.29.19 03.25	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	10.29.19 03.25	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.29.19 03.25	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	10.29.19 03.25	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.29.19 03.25	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.29.19 03.25	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.29.19 03.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.29.19 03.25		
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.29.19 03.25		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH29**
Lab Sample Id: 641213-011

Matrix: Soil
Date Collected: 10.25.19 15.00

Date Received: 10.28.19 08.15
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.6	10.1	mg/kg	10.30.19 04.00		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105684

Date Prep: 10.28.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.28.19 18.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.28.19 18.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.28.19 18.47	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.28.19 18.47	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.28.19 18.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.28.19 18.47	
o-Terphenyl	84-15-1	93	%	70-135	10.28.19 18.47	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH29**
 Lab Sample Id: 641213-011

Matrix: Soil
 Date Collected: 10.25.19 15.00

Date Received: 10.28.19 08.15
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 17.10

Basis: Wet Weight

Seq Number: 3105680

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 03.46	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 03.46	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 03.46	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.29.19 03.46	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 03.46	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 03.46	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 03.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.29.19 03.46		
4-Bromofluorobenzene	460-00-4	111	%	70-130	10.29.19 03.46		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH29A**
Lab Sample Id: 641213-012

Matrix: Soil
Date Collected: 10.25.19 15.05

Date Received: 10.28.19 08.15
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	44.3	10.1	mg/kg	10.30.19 04.13		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105684

Date Prep: 10.28.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 18.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 18.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 18.47	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 18.47	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 18.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	10.28.19 18.47	
o-Terphenyl	84-15-1	89	%	70-135	10.28.19 18.47	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH29A**
 Lab Sample Id: 641213-012

Matrix: Soil
 Date Collected: 10.25.19 15.05

Date Received: 10.28.19 08.15
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 17.10

Basis: Wet Weight

Seq Number: 3105680

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.29.19 04.06	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	10.29.19 04.06	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.29.19 04.06	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	10.29.19 04.06	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.29.19 04.06	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.29.19 04.06	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.29.19 04.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.29.19 04.06		
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.29.19 04.06		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH30**
Lab Sample Id: 641213-013

Matrix: Soil
Date Collected: 10.25.19 15.40

Date Received: 10.28.19 08.15
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	56.6	9.90	mg/kg	10.30.19 04.49		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105684

Date Prep: 10.28.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 19.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 19.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 19.07	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 19.07	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 19.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.28.19 19.07	
o-Terphenyl	84-15-1	97	%	70-135	10.28.19 19.07	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH30**
 Lab Sample Id: 641213-013

Matrix: Soil
 Date Collected: 10.25.19 15.40

Date Received: 10.28.19 08.15
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 17.10

Basis: Wet Weight

Seq Number: 3105680

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.29.19 04.26	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	10.29.19 04.26	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.29.19 04.26	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.29.19 04.26	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.29.19 04.26	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.29.19 04.26	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.29.19 04.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	10.29.19 04.26		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.29.19 04.26		



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH30A**
Lab Sample Id: 641213-014

Matrix: Soil
Date Collected: 10.25.19 15.45

Date Received: 10.28.19 08.15
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: JYM

Analyst: JYM

Seq Number: 3105787

Date Prep: 10.29.19 14.13

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.6	9.92	mg/kg	10.30.19 05.01		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105684

Date Prep: 10.28.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.28.19 19.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.28.19 19.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.28.19 19.07	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.28.19 19.07	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.28.19 19.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	72	%	70-135	10.28.19 19.07	
o-Terphenyl	84-15-1	90	%	70-135	10.28.19 19.07	



Certificate of Analytical Results 641213

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH30A**
 Lab Sample Id: 641213-014

Matrix: Soil
 Date Collected: 10.25.19 15.45

Date Received: 10.28.19 08.15
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.28.19 17.10

Basis: Wet Weight

Seq Number: 3105680

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.29.19 03.05	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	10.29.19 03.05	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.29.19 03.05	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.29.19 03.05	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.29.19 03.05	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.29.19 03.05	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.29.19 03.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.29.19 03.05		
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.29.19 03.05		



Flagging Criteria

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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3105787

MB Sample Id: 7689134-1-BLK

Matrix: Solid

LCS Sample Id: 7689134-1-BKS

Prep Method: E300P

Date Prep: 10.29.19

LCSD Sample Id: 7689134-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	0.428	100	109	109	109	109	80-120	0	20	mg/kg	10.30.19 00:08	

Analytical Method: Chloride by EPA 300

Seq Number: 3105787

Parent Sample Id: 640754-121

Matrix: Soil

MS Sample Id: 640754-121 S

Prep Method: E300P

Date Prep: 10.29.19

MSD Sample Id: 640754-121 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	325	99.8	414	89	413	88	80-120	0	20	mg/kg	10.30.19 00:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3105787

Parent Sample Id: 641213-003

Matrix: Soil

MS Sample Id: 641213-003 S

Prep Method: E300P

Date Prep: 10.29.19

MSD Sample Id: 641213-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1050	101	1140	89	1130	80	80-120	1	20	mg/kg	10.30.19 01:46	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105682

MB Sample Id: 7689049-1-BLK

Matrix: Solid

LCS Sample Id: 7689049-1-BKS

Prep Method: SW8015P

Date Prep: 10.28.19

LCSD Sample Id: 7689049-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	897	90	853	85	70-135	5	35	mg/kg	10.28.19 12:46	
Diesel Range Organics (DRO)	13.3	1000	789	79	770	77	70-135	2	35	mg/kg	10.28.19 12:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		122		131		70-135	%	10.28.19 12:46
o-Terphenyl	96		122		116		70-135	%	10.28.19 12:46

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

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

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

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



LT Environmental, Inc.

Elk Wallow II State Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105684

MB Sample Id: 7689068-1-BLK

Matrix: Solid

LCS Sample Id: 7689068-1-BKS

Prep Method: SW8015P

Date Prep: 10.28.19

LCSD Sample Id: 7689068-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	911	91	904	90	70-135	1	35	mg/kg	10.28.19 17:08	
Diesel Range Organics (DRO)	<50.0	1000	777	78	760	76	70-135	2	35	mg/kg	10.28.19 17:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		137	**	126		70-135	%	10.28.19 17:08
o-Terphenyl	104		119		119		70-135	%	10.28.19 17:08

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105682

Matrix: Solid

MB Sample Id: 7689049-1-BLK

Prep Method: SW8015P

Date Prep: 10.28.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.28.19 12:26	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105684

Matrix: Solid

MB Sample Id: 7689068-1-BLK

Prep Method: SW8015P

Date Prep: 10.28.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.28.19 17:08	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105682

Matrix: Soil

Parent Sample Id: 640754-118

MS Sample Id: 640754-118 S

Prep Method: SW8015P

Date Prep: 10.28.19

MSD Sample Id: 640754-118 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	954	95	938	94	70-135	2	35	mg/kg	10.28.19 13:06	
Diesel Range Organics (DRO)	<50.2	1000	843	84	826	83	70-135	2	35	mg/kg	10.28.19 13:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	134		118		70-135	%	10.28.19 13:06
o-Terphenyl	109		116		70-135	%	10.28.19 13:06

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105684

Parent Sample Id: 641213-006

Matrix: Soil

MS Sample Id: 641213-006 S

Prep Method: SW8015P

Date Prep: 10.28.19

MSD Sample Id: 641213-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	855	85	845	85	70-135	1	35	mg/kg	10.28.19 17:48	
Diesel Range Organics (DRO)	<50.3	1010	711	70	713	71	70-135	0	35	mg/kg	10.28.19 17:48	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		130		70-135	%	10.28.19 17:48
o-Terphenyl	111		112		70-135	%	10.28.19 17:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105688

MB Sample Id: 7689077-1-BLK

Matrix: Solid

LCS Sample Id: 7689077-1-BKS

Prep Method: SW5030B

Date Prep: 10.28.19

LCSD Sample Id: 7689077-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0977	98	0.0916	92	70-130	6	35	mg/kg	10.28.19 14:20	
Toluene	<0.00100	0.100	0.0963	96	0.0895	90	70-130	7	35	mg/kg	10.28.19 14:20	
Ethylbenzene	<0.00100	0.100	0.0988	99	0.0911	91	71-129	8	35	mg/kg	10.28.19 14:20	
m,p-Xylenes	<0.00200	0.200	0.198	99	0.183	92	70-135	8	35	mg/kg	10.28.19 14:20	
o-Xylene	<0.00100	0.100	0.0998	100	0.0936	94	71-133	6	35	mg/kg	10.28.19 14:20	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		101		100		70-130	%	10.28.19 14:20
4-Bromofluorobenzene	102		106		109		70-130	%	10.28.19 14:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105680

MB Sample Id: 7689078-1-BLK

Matrix: Solid

LCS Sample Id: 7689078-1-BKS

Prep Method: SW5030B

Date Prep: 10.28.19

LCSD Sample Id: 7689078-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0977	98	0.0916	92	70-130	6	35	mg/kg	10.29.19 01:09	
Toluene	<0.00100	0.100	0.0963	96	0.0895	90	70-130	7	35	mg/kg	10.29.19 01:09	
Ethylbenzene	<0.00100	0.100	0.0988	99	0.0911	91	71-129	8	35	mg/kg	10.29.19 01:09	
m,p-Xylenes	<0.00200	0.200	0.198	99	0.183	92	70-135	8	35	mg/kg	10.29.19 01:09	
o-Xylene	<0.00100	0.100	0.0998	100	0.0936	94	71-133	6	35	mg/kg	10.29.19 01:09	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		101		100		70-130	%	10.29.19 01:09
4-Bromofluorobenzene	108		106		109		70-130	%	10.29.19 01:09

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105688

Parent Sample Id: 641208-001

Matrix: Soil

MS Sample Id: 641208-001 S

Prep Method: SW5030B

Date Prep: 10.28.19

MSD Sample Id: 641208-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0818	82	0.0964	96	70-130	16	35	mg/kg	10.28.19 14:56	
Toluene	<0.00100	0.100	0.0812	81	0.0950	95	70-130	16	35	mg/kg	10.28.19 14:56	
Ethylbenzene	<0.00100	0.100	0.0827	83	0.0957	96	71-129	15	35	mg/kg	10.28.19 14:56	
m,p-Xylenes	<0.00200	0.200	0.169	85	0.195	98	70-135	14	35	mg/kg	10.28.19 14:56	
o-Xylene	<0.00100	0.100	0.0847	85	0.0977	98	71-133	14	35	mg/kg	10.28.19 14:56	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		103		70-130	%	10.28.19 14:56
4-Bromofluorobenzene	109		118		70-130	%	10.28.19 14:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105680

Parent Sample Id: 641213-014

Matrix: Soil

MS Sample Id: 641213-014 S

Prep Method: SW5030B

Date Prep: 10.28.19

MSD Sample Id: 641213-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000996	0.0996	0.0901	90	0.0802	80	70-130	12	35	mg/kg	10.29.19 01:50	
Toluene	<0.000996	0.0996	0.0885	89	0.0783	78	70-130	12	35	mg/kg	10.29.19 01:50	
Ethylbenzene	<0.000996	0.0996	0.0903	91	0.0798	80	71-129	12	35	mg/kg	10.29.19 01:50	
m,p-Xylenes	<0.00199	0.199	0.181	91	0.160	80	70-135	12	35	mg/kg	10.29.19 01:50	
o-Xylene	<0.000996	0.0996	0.0909	91	0.0805	81	71-133	12	35	mg/kg	10.29.19 01:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		101		70-130	%	10.29.19 01:50
4-Bromofluorobenzene	115		113		70-130	%	10.29.19 01:50

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

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

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

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



Chain of Custody

Work Order No: 1473

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0340 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 595-5447 Lubbock, TX (806) 794-1296
717-787-7454 Omaha, NE (402) 444-7777

Page 1 of 1

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

Project Name: <i>FTK Vail</i>	
dmoir@xtoenergy.com	

Program: UST/PST ☐ RP ☐ brownfields ☐ RC ☐ Superfund ☐ State of Project: _____ Reporting level II ☐ level III ☐ UST/UST ☐ RP ☐ level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other: _____

Project Number:	28P-4967	Turn Around	
P.O. Number:		Routine	☐
Sample's Name:	Robert McAtee	Rush:	2 day
		Due Date:	

SAMPLE RECEIPT			
Temperature (°C):	Temp Blank:	Yes ☒ No ☐	Wet Ice: Yes ☒ No ☐
Received Intact:	Thermometer ID:		
Yes ☒ No ☐	T-N/A-007		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor: -0.2	
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers: 14	

ANALYSIS REQUEST										Work Order Notes
Number of Containers: 14 EPA 8015) EPA 0-8021) (EPA 300.0) TAT starts the day received by the lab, if received by 4:30pm										

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
PH24	S	10/23/19	1002	1'	1	X	X	X	discrete
PH24A			1040	8'		X	X	X	
PH25			1125	6'		X	X	X	
PH25A			1150	8'		X	X	X	
PH26			1245	2'		X	X	X	
PH26A			1305	8'		X	X	X	
PH27			1335	4'		X	X	X	
PH27A			1400	7'		X	X	X	
PH28			1415	3'		X	X	X	
PH28A			1440	8'		X	X	X	

Signature of this document and method used: 16331/245.1/7470 / 7471 : Hg

Wice, Xencos will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client. If such losses are due to circumstances beyond the control of Xenco, A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Received by: (Signature)	Date/Time	Refinquisitioned by: (Signature)	Received by: (Signature)	Date/Time
A.B. Page	[Signature]	10/28/19 08:15	2		
			4		
			6		



Chain of Custody

Work Order No: 1041215

Hobbs, NM (575-382-7550)	Phoenix, AZ (480-355-0900)	Atlanta, GA (770-449-8800)	Tampa, FL (813-988-3333)
Midland, TX (432-704-5440)	El Paso, TX (915)85-3443	Lubbock, TX (806)794-1296	
Houston, TX (281)240-4200	Dallas, TX (214)902-0300	San Antonio, TX (210)500-3333	
Fill in: (if attached)			
Kyrie Little			

WYNN JENNIFER COHEN

Page _____ of _____

Project Manager:	Dan Moll	Bill to: (if different)	Kyle Litrel
Company Name:	LT Environmental, Inc. Permit office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	dmoll@xtoenergy.com
Project Name:			

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

Project Number:	2010-11-15-16-17	Turn Around
P.O. Number:	2010-11-15-16-17	Routine ☐
Sampler's Name:	Robert McAfee	Rush: 2 day
		Due Date:

[illegible]

SAMPLE RECEIPT		Temp Ethanol:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):							
Received In tact:	Yes	No					
Cooler Can body Seals:	Yes	No	N/A				
Sample Custody Seals:	Yes	No	N/A				
			Correction Factor:				
			Total Containers:				

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride (EPA)	Sample Comments
PH29A	S	4/20/19	1500	6'	5	X	X	X	discuss
PH30			1505	6'		X	X	X	
PH30A			1540	6'		X	X	X	
			1545	3'		X	X	X	

Signature of this document and analysis date: 2008/06/20

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

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

1631 / 245.1 / 7470 / 7471 : Hg

co. Xeno will be made only the cost of samples and shall not assume any responsibility for any issues or expenses incurred by the client if such issues are due to circumstances beyond the control of a minimum charge of \$75.00 will be applied to each report and a charge of \$5 for each sample submitted to Xeno, but not analyzed. These terms will be enforced unless previously negotiated.

[illegible]

Received by (signature)	Date/Time
<i>[Signature]</i>	10/8/19, 08:15

[illegible]

Inter-Office Shipment

IOS Number : **50936**

Date/Time: 10.28.2019

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Houston**

Air Bill No.: 776834333611

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
641213-001	S	PH24	10.25.2019 10:02	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-002	S	PH24A	10.25.2019 10:40	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-003	S	PH25	10.25.2019 11:25	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-004	S	PH25A	10.25.2019 11:50	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-005	S	PH26	10.25.2019 12:45	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-006	S	PH26A	10.25.2019 13:05	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-007	S	PH27	10.25.2019 13:35	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-008	S	PH27A	10.25.2019 14:00	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-009	S	PH28	10.25.2019 14:15	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-010	S	PH28A	10.25.2019 14:40	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-011	S	PH29	10.25.2019 15:00	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-012	S	PH29A	10.25.2019 15:05	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-013	S	PH30	10.25.2019 15:40	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	
641213-014	S	PH30A	10.25.2019 15:45	E300_CL	Chloride by EPA 300	10.30.2019	04.22.2020	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:



Elizabeth McClellan

Date Relinquished: 10.28.2019

Received By:



Travis Simmons

Date Received: 10.29.2019

Cooler Temperature: 4.2



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 50936

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Elizabeth McClellan

Date Sent: 10.28.2019 10.14 AM

Received By: Travis Simmons

Date Received: 10.29.2019 09.35 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	4.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 *Custody Seals Signed and dated for Containers/coolers	N/A
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Travis Simmons

Date: 10.29.2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/28/2019 08:15:00 AM

Work Order #: 641213

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.4	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6 *Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Chlorides subbed to Midland.
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 10/28/2019

Checklist reviewed by:

Jessica Kramer

Date: 10/28/2019

Analytical Report 641345

for
LT Environmental, Inc.

Project Manager: Dan Moir
Elk Wallow II State Battery

30-OCT-19

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



30-OCT-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **641345**

Elk Wallow II State Battery

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) 641345. 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. 641345 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 641345****LT Environmental, Inc., Arvada, CO**

Elk Wallow II State Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH31	S	10-28-19 09:30	3 ft	641345-001
PH31A	S	10-28-19 09:45	8 ft	641345-002
PH32	S	10-28-19 10:20	3 ft	641345-003
PH32A	S	10-28-19 11:25	8 ft	641345-004
PH33	S	10-28-19 11:35	4 ft	641345-005
PH33A	S	10-28-19 12:10	8 ft	641345-006
PH34	S	10-28-19 12:30	3 ft	641345-007
PH34A	S	10-28-19 13:55	8 ft	641345-008
PH35	S	10-28-19 13:55	1 ft	641345-009
PH35A	S	10-28-19 14:30	8 ft	641345-010
PH36	S	10-28-19 15:00	2 ft	641345-011
PH36A	S	10-28-19 15:20	8 ft	641345-012

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Elk Wallow II State Battery**

Project ID:
Work Order Number(s): 641345

Report Date: 30-OCT-19
Date Received: 10/29/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3105806 BTEX by EPA 8021B

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

Batch: LBA-3105880 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 641345-010 S.

Batch: LBA-3105918 TPH by SW8015 Mod

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

Samples affected are: 641345-001.

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7689204-1-BSD.



Certificate of Analysis Summary 641345

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Oct-29-19 09:30 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641345-001	641345-002	641345-003	641345-004	641345-005	641345-006
	<i>Field Id:</i>	PH31	PH31A	PH32	PH32A	PH33	PH33A
	<i>Depth:</i>	3- ft	8- ft	3- ft	8- ft	4- ft	8- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-28-19 09:30	Oct-28-19 09:45	Oct-28-19 10:20	Oct-28-19 11:25	Oct-28-19 11:35	Oct-28-19 12:10
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-29-19 11:10	Oct-29-19 11:10	Oct-29-19 11:10	Oct-29-19 11:10	Oct-29-19 11:10	Oct-29-19 11:10
	<i>Analyzed:</i>	Oct-29-19 17:35	Oct-29-19 17:54	Oct-29-19 18:13	Oct-29-19 18:32	Oct-29-19 18:51	Oct-29-19 19:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Chloride by EPA 300	<i>Extracted:</i>	Oct-29-19 12:10	Oct-29-19 12:10	Oct-29-19 12:10	Oct-29-19 12:10	Oct-29-19 12:10	Oct-29-19 12:10
	<i>Analyzed:</i>	Oct-29-19 17:21	Oct-29-19 17:27	Oct-29-19 17:33	Oct-29-19 17:39	Oct-29-19 17:46	Oct-29-19 17:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		360 10.1	10.5 10.0	18.5 9.98	<9.96 9.96	<9.94 9.94	19.0 9.90
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-29-19 11:20	Oct-29-19 11:20	Oct-29-19 11:20	Oct-29-19 11:20	Oct-29-19 11:20	Oct-29-19 11:20
	<i>Analyzed:</i>	Oct-30-19 13:07	Oct-30-19 13:07	Oct-29-19 15:10	Oct-29-19 15:10	Oct-29-19 15:31	Oct-29-19 15:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.0 50.0
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.0 50.0
Total GRO-DRO		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.0 50.0
Total TPH		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.0 50.0

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641345

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Oct-29-19 09:30 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641345-007	641345-008	641345-009	641345-010	641345-011	641345-012
	<i>Field Id:</i>	PH34	PH34A	PH35	PH35A	PH36	PH36A
	<i>Depth:</i>	3- ft	8- ft	1- ft	8- ft	2- ft	8- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-28-19 12:30	Oct-28-19 13:55	Oct-28-19 13:55	Oct-28-19 14:30	Oct-28-19 15:00	Oct-28-19 15:20
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-29-19 11:10	Oct-29-19 11:10	Oct-29-19 11:10	Oct-29-19 11:10	Oct-29-19 11:10	Oct-29-19 11:10
	<i>Analyzed:</i>	Oct-29-19 20:14	Oct-29-19 20:33	Oct-29-19 20:52	Oct-29-19 21:12	Oct-29-19 21:31	Oct-29-19 21:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Chloride by EPA 300	<i>Extracted:</i>	Oct-29-19 12:10	Oct-29-19 12:10	Oct-29-19 12:10	Oct-29-19 12:10	Oct-29-19 12:10	Oct-29-19 12:10
	<i>Analyzed:</i>	Oct-29-19 18:29	Oct-29-19 18:48	Oct-29-19 18:54	Oct-29-19 19:01	Oct-29-19 19:07	Oct-29-19 19:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<9.86 9.86	<9.98 9.98	<9.92 9.92	14.4 9.92	<9.86 9.86	66.0 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-29-19 11:20	Oct-29-19 11:20	Oct-29-19 11:20	Oct-29-19 16:30	Oct-29-19 16:30	Oct-29-19 16:30
	<i>Analyzed:</i>	Oct-29-19 15:50	Oct-29-19 15:50	Oct-29-19 16:10	Oct-29-19 16:50	Oct-29-19 17:30	Oct-29-19 17:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8	<49.8 49.8	<49.8 49.8
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8	<49.8 49.8	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8	<49.8 49.8	<49.8 49.8
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8	<49.8 49.8	<49.8 49.8
Total TPH		<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8	<49.8 49.8	<49.8 49.8

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH31**
Lab Sample Id: 641345-001

Matrix: Soil
Date Collected: 10.28.19 09.30

Date Received: 10.29.19 09.30
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105792

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	360	10.1	mg/kg	10.29.19 17.21		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105918

Date Prep: 10.29.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.30.19 13.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.30.19 13.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.30.19 13.07	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.30.19 13.07	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.30.19 13.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	10.30.19 13.07	
o-Terphenyl	84-15-1	143	%	70-135	10.30.19 13.07	**



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH31**
 Lab Sample Id: 641345-001

Matrix: Soil
 Date Collected: 10.28.19 09.30

Date Received: 10.29.19 09.30
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 17.35	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 17.35	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 17.35	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 17.35	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 17.35	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 17.35	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 17.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	10.29.19 17.35		
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.29.19 17.35		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH31A**
Lab Sample Id: 641345-002

Matrix: Soil
Date Collected: 10.28.19 09.45

Date Received: 10.29.19 09.30
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105792

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.5	10.0	mg/kg	10.29.19 17.27		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105918

Date Prep: 10.29.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.30.19 13.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.30.19 13.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.30.19 13.07	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.30.19 13.07	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.30.19 13.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	10.30.19 13.07	
o-Terphenyl	84-15-1	113	%	70-135	10.30.19 13.07	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH31A**
 Lab Sample Id: 641345-002

Matrix: Soil
 Date Collected: 10.28.19 09.45

Date Received: 10.29.19 09.30
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 17.54	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 17.54	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 17.54	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 17.54	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 17.54	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 17.54	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 17.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.29.19 17.54		
4-Bromofluorobenzene	460-00-4	119	%	70-130	10.29.19 17.54		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH32**
Lab Sample Id: 641345-003

Matrix: Soil
Date Collected: 10.28.19 10.20

Date Received: 10.29.19 09.30
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105792

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.5	9.98	mg/kg	10.29.19 17.33		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105918

Date Prep: 10.29.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.29.19 15.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.29.19 15.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.29.19 15.10	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.29.19 15.10	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.29.19 15.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	10.29.19 15.10	
o-Terphenyl	84-15-1	104	%	70-135	10.29.19 15.10	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH32**
 Lab Sample Id: 641345-003

Matrix: Soil
 Date Collected: 10.28.19 10.20

Date Received: 10.29.19 09.30
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 18.13	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 18.13	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 18.13	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 18.13	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 18.13	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 18.13	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 18.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	10.29.19 18.13		
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.29.19 18.13		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH32A**
Lab Sample Id: 641345-004

Matrix: Soil
Date Collected: 10.28.19 11.25

Date Received: 10.29.19 09.30
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105792

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	10.29.19 17.39	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105918

Date Prep: 10.29.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.29.19 15.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.29.19 15.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.29.19 15.10	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.29.19 15.10	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.29.19 15.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	10.29.19 15.10	
o-Terphenyl	84-15-1	118	%	70-135	10.29.19 15.10	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH32A**
 Lab Sample Id: 641345-004

Matrix: Soil
 Date Collected: 10.28.19 11.25

Date Received: 10.29.19 09.30
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 18.32	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 18.32	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 18.32	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 18.32	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 18.32	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 18.32	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 18.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.29.19 18.32		
4-Bromofluorobenzene	460-00-4	125	%	70-130	10.29.19 18.32		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH33**
Lab Sample Id: 641345-005

Matrix: Soil
Date Collected: 10.28.19 11.35

Date Received: 10.29.19 09.30
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105792

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.94	9.94	mg/kg	10.29.19 17.46	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105918

Date Prep: 10.29.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.29.19 15.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.29.19 15.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.29.19 15.31	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.29.19 15.31	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.29.19 15.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	10.29.19 15.31	
o-Terphenyl	84-15-1	105	%	70-135	10.29.19 15.31	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH33**
 Lab Sample Id: 641345-005

Matrix: Soil
 Date Collected: 10.28.19 11.35

Date Received: 10.29.19 09.30
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 18.51	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 18.51	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 18.51	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 18.51	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 18.51	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 18.51	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 18.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	10.29.19 18.51		
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.29.19 18.51		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH33A**
Lab Sample Id: 641345-006

Matrix: Soil
Date Collected: 10.28.19 12.10

Date Received: 10.29.19 09.30
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105792

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.0	9.90	mg/kg	10.29.19 17.52		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105918

Date Prep: 10.29.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.29.19 15.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.29.19 15.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.29.19 15.31	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.29.19 15.31	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.29.19 15.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.29.19 15.31	
o-Terphenyl	84-15-1	100	%	70-135	10.29.19 15.31	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH33A**
 Lab Sample Id: 641345-006

Matrix: Soil
 Date Collected: 10.28.19 12.10

Date Received: 10.29.19 09.30
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 19.10	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 19.10	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 19.10	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 19.10	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 19.10	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 19.10	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 19.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	10.29.19 19.10		
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.29.19 19.10		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH34**
Lab Sample Id: 641345-007

Matrix: Soil
Date Collected: 10.28.19 12.30

Date Received: 10.29.19 09.30
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105795

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.86	9.86	mg/kg	10.29.19 18.29	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105918

Date Prep: 10.29.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.29.19 15.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.29.19 15.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.29.19 15.50	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.29.19 15.50	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.29.19 15.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	10.29.19 15.50	
o-Terphenyl	84-15-1	112	%	70-135	10.29.19 15.50	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH34**
 Lab Sample Id: 641345-007

Matrix: Soil
 Date Collected: 10.28.19 12.30

Date Received: 10.29.19 09.30
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 20.14	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 20.14	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 20.14	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 20.14	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 20.14	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 20.14	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 20.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	10.29.19 20.14		
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.29.19 20.14		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH34A**
Lab Sample Id: 641345-008

Matrix: Soil
Date Collected: 10.28.19 13.55

Date Received: 10.29.19 09.30
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105795

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	10.29.19 18.48	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105918

Date Prep: 10.29.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.29.19 15.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.29.19 15.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.29.19 15.50	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.29.19 15.50	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.29.19 15.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	10.29.19 15.50	
o-Terphenyl	84-15-1	104	%	70-135	10.29.19 15.50	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH34A**
 Lab Sample Id: 641345-008

Matrix: Soil
 Date Collected: 10.28.19 13.55

Date Received: 10.29.19 09.30
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 20.33	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 20.33	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 20.33	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 20.33	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 20.33	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 20.33	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 20.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.29.19 20.33		
4-Bromofluorobenzene	460-00-4	117	%	70-130	10.29.19 20.33		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH35**
 Lab Sample Id: 641345-009

Matrix: Soil
 Date Collected: 10.28.19 13.55

Date Received: 10.29.19 09.30
 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105795

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.92	9.92	mg/kg	10.29.19 18.54	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105918

Date Prep: 10.29.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.29.19 16.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.29.19 16.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.29.19 16.10	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.29.19 16.10	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.29.19 16.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	10.29.19 16.10	
o-Terphenyl	84-15-1	113	%	70-135	10.29.19 16.10	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH35**
 Lab Sample Id: 641345-009

Matrix: Soil
 Date Collected: 10.28.19 13.55

Date Received: 10.29.19 09.30
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 20.52	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 20.52	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 20.52	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 20.52	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 20.52	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 20.52	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 20.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	10.29.19 20.52		
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.29.19 20.52		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH35A**
Lab Sample Id: 641345-010

Matrix: Soil
Date Collected: 10.28.19 14.30

Date Received: 10.29.19 09.30
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105795

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.4	9.92	mg/kg	10.29.19 19.01		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105880

Date Prep: 10.29.19 16.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.29.19 16.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.29.19 16.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.29.19 16.50	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.29.19 16.50	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.29.19 16.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	10.29.19 16.50	
o-Terphenyl	84-15-1	107	%	70-135	10.29.19 16.50	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH35A**
 Lab Sample Id: 641345-010

Matrix: Soil
 Date Collected: 10.28.19 14.30

Date Received: 10.29.19 09.30
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 21.12	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 21.12	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 21.12	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 21.12	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 21.12	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 21.12	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 21.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	10.29.19 21.12		
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.29.19 21.12		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH36**
Lab Sample Id: 641345-011

Matrix: Soil
Date Collected: 10.28.19 15.00

Date Received: 10.29.19 09.30
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105795

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.86	9.86	mg/kg	10.29.19 19.07	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105880

Date Prep: 10.29.19 16.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.29.19 17.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.29.19 17.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.29.19 17.30	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.29.19 17.30	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.29.19 17.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	10.29.19 17.30	
o-Terphenyl	84-15-1	113	%	70-135	10.29.19 17.30	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH36**
 Lab Sample Id: 641345-011

Matrix: Soil
 Date Collected: 10.28.19 15.00

Date Received: 10.29.19 09.30
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 21.31	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 21.31	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 21.31	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 21.31	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 21.31	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 21.31	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 21.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	10.29.19 21.31		
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.29.19 21.31		



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH36A**
Lab Sample Id: 641345-012

Matrix: Soil
Date Collected: 10.28.19 15.20

Date Received: 10.29.19 09.30
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105795

Date Prep: 10.29.19 12.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	66.0	10.0	mg/kg	10.29.19 19.26		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3105880

Date Prep: 10.29.19 16.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.29.19 17.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.29.19 17.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.29.19 17.30	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.29.19 17.30	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.29.19 17.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	10.29.19 17.30	
o-Terphenyl	84-15-1	109	%	70-135	10.29.19 17.30	



Certificate of Analytical Results 641345

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **PH36A**
 Lab Sample Id: 641345-012

Matrix: Soil
 Date Collected: 10.28.19 15.20

Date Received: 10.29.19 09.30
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.29.19 11.10

Basis: Wet Weight

Seq Number: 3105806

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.29.19 21.50	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.29.19 21.50	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.29.19 21.50	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.29.19 21.50	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.29.19 21.50	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.29.19 21.50	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.29.19 21.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	10.29.19 21.50		
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.29.19 21.50		



Flagging Criteria

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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3105792

MB Sample Id: 7689123-1-BLK

Matrix: Solid

LCS Sample Id: 7689123-1-BKS

Prep Method: E300P

Date Prep: 10.29.19

LCSD Sample Id: 7689123-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	300	304	101	302	101	90-110	1	20	mg/kg	10.29.19 14:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3105792

MB Sample Id: 7689124-1-BLK

Matrix: Solid

LCS Sample Id: 7689124-1-BKS

Prep Method: E300P

Date Prep: 10.29.19

LCSD Sample Id: 7689124-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	300	305	102	306	102	90-110	0	20	mg/kg	10.29.19 18:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3105792

Parent Sample Id: 641339-001

Matrix: Soil

MS Sample Id: 641339-001 S

Prep Method: E300P

Date Prep: 10.29.19

MSD Sample Id: 641339-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	606	1240	1940	108	1830	99	90-110	6	20	mg/kg	10.29.19 15:15	

Analytical Method: Chloride by EPA 300

Seq Number: 3105792

Parent Sample Id: 641339-011

Matrix: Soil

MS Sample Id: 641339-011 S

Prep Method: E300P

Date Prep: 10.29.19

MSD Sample Id: 641339-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	719	1240	2070	109	2070	108	90-110	0	20	mg/kg	10.29.19 16:43	

Analytical Method: Chloride by EPA 300

Seq Number: 3105795

Parent Sample Id: 641345-007

Matrix: Soil

MS Sample Id: 641345-007 S

Prep Method: E300P

Date Prep: 10.29.19

MSD Sample Id: 641345-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.83	247	236	94	240	94	90-110	2	20	mg/kg	10.29.19 18:36	

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3105795

Parent Sample Id: 641443-005

Matrix: Solid

MS Sample Id: 641443-005 S

Prep Method: E300P

Date Prep: 10.29.19

MSD Sample Id: 641443-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	205	252	484	111	482	110	90-110	0	20	mg/kg	10.29.19 22:09	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105918

MB Sample Id: 7689204-1-BLK

Matrix: Solid

LCS Sample Id: 7689204-1-BKS

Prep Method: SW8015P

Date Prep: 10.29.19

LCSD Sample Id: 7689204-1-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)	<13.9	1000	895	90	892	89	70-135	0	35	mg/kg	10.29.19 12:00	
Diesel Range Organics (DRO)	19.5	1000	758	76	748	75	70-135	1	35	mg/kg	10.29.19 12:00	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		121		136	**	70-135	%	10.29.19 12:00
o-Terphenyl	98		120		116		70-135	%	10.29.19 12:00

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105880

MB Sample Id: 7689206-1-BLK

Matrix: Solid

LCS Sample Id: 7689206-1-BKS

Prep Method: SW8015P

Date Prep: 10.29.19

LCSD Sample Id: 7689206-1-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)	<13.9	1000	887	89	895	90	70-135	1	35	mg/kg	10.29.19 16:30	
Diesel Range Organics (DRO)	<11.5	1000	762	76	752	75	70-135	1	35	mg/kg	10.29.19 16:30	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		134		123		70-135	%	10.29.19 16:30
o-Terphenyl	105		120		122		70-135	%	10.29.19 16:30

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105918

Matrix: Solid

MB Sample Id: 7689204-1-BLK

Prep Method: SW8015P

Date Prep: 10.29.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.29.19 11:40	

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105880

Matrix: Solid

Prep Method: SW8015P

Date Prep: 10.29.19

MB Sample Id: 7689206-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.29.19 16:30	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105918

Matrix: Soil

Prep Method: SW8015P

Date Prep: 10.29.19

Parent Sample Id: 641338-001

MS Sample Id: 641338-001 S

MSD Sample Id: 641338-001 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	822	82	881	88	70-135	7	35	mg/kg	10.29.19 12:21	
Diesel Range Organics (DRO)	23.6	1000	705	68	768	74	70-135	9	35	mg/kg	10.29.19 12:21	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		115		70-135	%	10.29.19 12:21
o-Terphenyl	113		115		70-135	%	10.29.19 12:21

Analytical Method: TPH by SW8015 Mod

Seq Number: 3105880

Matrix: Soil

Prep Method: SW8015P

Date Prep: 10.29.19

Parent Sample Id: 641345-010

MS Sample Id: 641345-010 S

MSD Sample Id: 641345-010 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)	<13.8	995	903	91	870	87	70-135	4	35	mg/kg	10.29.19 17:10	
Diesel Range Organics (DRO)	15.8	995	746	73	741	73	70-135	1	35	mg/kg	10.29.19 17:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	144	**	131		70-135	%	10.29.19 17:10
o-Terphenyl	128		125		70-135	%	10.29.19 17:10

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

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

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

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



LT Environmental, Inc.

Elk Wallow II State Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105806

MB Sample Id: 7689196-1-BLK

Matrix: Solid

LCS Sample Id: 7689196-1-BKS

Prep Method: SW5030B

Date Prep: 10.29.19

LCSD Sample Id: 7689196-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.104	104	0.0989	99	70-130	5	35	mg/kg	10.29.19 14:36	
Toluene	<0.00100	0.100	0.105	105	0.0994	99	70-130	5	35	mg/kg	10.29.19 14:36	
Ethylbenzene	<0.00100	0.100	0.105	105	0.0990	99	71-129	6	35	mg/kg	10.29.19 14:36	
m,p-Xylenes	<0.00200	0.200	0.225	113	0.212	106	70-135	6	35	mg/kg	10.29.19 14:36	
o-Xylene	<0.00100	0.100	0.112	112	0.106	106	71-133	6	35	mg/kg	10.29.19 14:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		100		101		70-130	%	10.29.19 14:36
4-Bromofluorobenzene	107		109		109		70-130	%	10.29.19 14:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105806

Parent Sample Id: 641339-010

Matrix: Soil

MS Sample Id: 641339-010 S

Prep Method: SW5030B

Date Prep: 10.29.19

MSD Sample Id: 641339-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0719	72	0.0993	99	70-130	32	35	mg/kg	10.29.19 15:14	
Toluene	<0.00100	0.100	0.0790	79	0.0971	97	70-130	21	35	mg/kg	10.29.19 15:14	
Ethylbenzene	0.000820	0.100	0.0749	74	0.0950	94	71-129	24	35	mg/kg	10.29.19 15:14	
m,p-Xylenes	<0.00100	0.200	0.138	69	0.201	101	70-135	37	35	mg/kg	10.29.19 15:14	XF
o-Xylene	<0.00100	0.100	0.0702	70	0.102	102	71-133	37	35	mg/kg	10.29.19 15:14	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		105		70-130	%	10.29.19 15:14
4-Bromofluorobenzene	121		120		70-130	%	10.29.19 15:14

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

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

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

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



Chain of Custody

Work Order No:

041345

Houston, TX (281) 240-4200 Dallas, TX (214) 802-0300 San Antonio, TX (210) 508-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 448-8800 Tampa, FL (813) 620-2000

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Page 1 of 2

Project Manager:	Dan Mofr	Bill to: (if different)	Kyle Litrel
Company Name:	L.T. Environmental, Inc. Permit office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	dmofr@xencolab.com kmlitrel@xtoenergy.com

Project Name:	Elk Wellbore 11 State Pathway	Turn Around	☐ Routine ☐ Rush: 3 days
Project Number:		Due Date:	
P.O. Number:	2RP-4967		
Sampler's Name:	Robert McAfee		

SAMPLE RECEIPT				ANALYSIS REQUEST				Work Order Notes	
Temperature (°C):	Temp Blank:	Yes	No	Well Ice:	Yes	No			
Received Intact:									
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:					
Sample Custody Seals:	Yes	No	N/A	Total Containers:					
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers				
PH31	S	10/12/14	0930	3'	1	X	X	X	
PH31A			0945	8'		X	X	X	
PH32			1020	3'		X	X	X	
PH32A			1035	8'		X	X	X	
PH33			1125	4'		X	X	X	
PH33A			1135	8'		X	X	X	
PH34			1210	3'		X	X	X	
PH34A			1230	8'		X	X	X	
PH35			1335	1'		X	X	X	
PH35A			1430	8'		X	X	X	

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10/14/14 0930			



Chain of Custody

Work Order No:

۲۴۱ ۳۹۵

Bill to: (if different)	Kyle Little

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Page 2 of 2

Project Manager:	Dan Mair	Bill to: (if different)	Kyle Litrel
Company Name:	LI Environmental, Inc., Permit office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432 704 5178	Email:	dmair@lienv.com
Project Name:	Erik Mair, 11-11-2011		

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

[illegible]

SAMPLE RECEIPT				
Temperature (°C):	Temp Blank:	Yes	No	Wet Ice:
Received Intact:	Yes	No		Yes
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:
Sample Custody Seals:	Yes	No	N/A	Total Containers:
Number of Containers: <u>Hydrometer 13</u>				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride
PH36	S	10/24/19	1500	2'	1	X	X	X
PH36A	S	10/25/19	1520	8'	1	X	X	X

Signature: [Handwritten Signature]

[illegible]

Total 200.7 / 6010	200.8 / 6020:

[illegible]

Circle Method(s) to be analyzed	TCLP / SPLP 6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U

Signature of this document and reimbursement of sampling conditions a valid model and code: 1631 / 245.1 / 7470 / 7471 : Hg

Accepted by (Signature) _____

Received by (Signature) _____

Relinquished by (Signature) _____

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10/24/190 0950



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/29/2019 09:30:00 AM

Work Order #: 641345

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 10/29/2019

Checklist reviewed by:

Jessica Kramer

Date: 10/30/2019

Analytical Report 641879

for
LT Environmental, Inc.

Project Manager: Dan Moir

Elk Wallow II State Battery

2RP-4967

04-NOV-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **641879**

Elk Wallow II State Battery

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) 641879. 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. 641879 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 641879****LT Environmental, Inc., Arvada, CO**

Elk Wallow II State Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS22	S	10-30-19 14:15	5 ft	641879-001
FS23	S	10-30-19 14:20	5.5 ft	641879-002
FS24	S	10-30-19 14:25	5.5 ft	641879-003
FS25	S	10-30-19 14:30	5.5 ft	641879-004
FS26	S	10-30-19 14:50	5 ft	641879-005
FS27	S	10-30-19 14:55	4 ft	641879-006
FS28	S	10-30-19 15:00	4 ft	641879-007
FS29	S	10-31-19 10:30	5.5 ft	641879-008
FS30	S	10-31-19 10:40	6 ft	641879-009
FS31	S	10-31-19 10:45	6 ft	641879-010
FS32	S	10-31-19 10:50	6 ft	641879-011
FS33	S	10-31-19 10:55	6 ft	641879-012
FS34	S	10-31-19 11:00	7 ft	641879-013
FS35	S	10-31-19 11:05	8 ft	641879-014
FS36	S	10-31-19 11:10	8 ft	641879-015

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Elk Wallow II State Battery**Project ID: 2RP-4967
Work Order Number(s): 641879Report Date: 04-NOV-19
Date Received: 11/01/2019**Sample receipt non conformances and comments:**

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106225 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 641879-003.

Batch: LBA-3106298 Chloride by EPA 300

Lab Sample ID 641879-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641879-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015.

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

Batch: LBA-3106303 BTEX by EPA 8021B

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

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

Samples affected are: 641879-005, 641879-003.



Certificate of Analysis Summary 641879

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 2RP-4967

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Nov-01-19 04:56 pm

Report Date: 04-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	641879-001	641879-002	641879-003	641879-004	641879-005	641879-006
	Field Id:	FS22	FS23	FS24	FS25	FS26	FS27
	Depth:	5- ft	5.5- ft	5.5- ft	5.5- ft	5- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-30-19 14:15	Oct-30-19 14:20	Oct-30-19 14:25	Oct-30-19 14:30	Oct-30-19 14:50	Oct-30-19 14:55
BTEX by EPA 8021B	Extracted:	Nov-01-19 18:11	Nov-01-19 18:11	Nov-01-19 18:11	Nov-01-19 18:11	Nov-01-19 18:11	Nov-01-19 18:11
	Analyzed:	Nov-02-19 11:48	Nov-02-19 12:08	Nov-02-19 12:28	Nov-02-19 12:49	Nov-02-19 13:09	Nov-02-19 13:30
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.00101 0.00101	<0.0102 0.0102	<0.00101 0.00101	<0.00100 0.00100	<0.00102 0.00102
Toluene		<0.000998 0.000998	<0.00101 0.00101	<0.0102 0.0102	<0.00101 0.00101	<0.00100 0.00100	<0.00102 0.00102
Ethylbenzene		<0.000998 0.000998	0.00736 0.00101	<0.0102 0.0102	0.0166 0.00101	<0.00100 0.00100	<0.00102 0.00102
m,p-Xylenes		<0.00200 0.00200	0.0163 0.00201	0.0470 0.0204	0.0356 0.00201	0.0128 0.00200	<0.00203 0.00203
o-Xylene		<0.000998 0.000998	0.00665 0.00101	0.0436 0.0102	0.0191 0.00101	0.00219 0.00100	<0.00102 0.00102
Total Xylenes		<0.000998 0.000998	0.0230 0.00101	0.0906 0.0102	0.0547 0.00101	0.0150 0.00100	<0.00102 0.00102
Total BTEX		<0.000998 0.000998	0.0303 0.00101	0.0906 0.0102	0.0713 0.00101	0.0150 0.00100	<0.00102 0.00102
Chloride by EPA 300	Extracted:	Nov-01-19 17:11	Nov-01-19 17:11	Nov-01-19 17:11	Nov-01-19 17:11	Nov-01-19 17:11	Nov-01-19 17:11
	Analyzed:	Nov-01-19 21:45	Nov-01-19 22:04	Nov-01-19 22:11	Nov-01-19 22:17	Nov-01-19 22:23	Nov-01-19 22:43
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		794 50.1	355 9.96	1370 49.9	1240 50.2	476 10.1	346 9.94
TPH by SW8015 Mod	Extracted:	** ** *	** ** *	** ** *	** ** *	** ** *	** ** *
	Analyzed:	Nov-01-19 23:13	Nov-01-19 23:33	Nov-01-19 23:53	Nov-02-19 00:33	Nov-02-19 00:52	Nov-02-19 01:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.3 50.3	182 49.8	157 50.3	<49.8 49.8	<50.2 50.2
Diesel Range Organics (DRO)		<50.1 50.1	<50.3 50.3	3280 49.8	2780 50.3	98.8 49.8	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.3 50.3	238 49.8	221 50.3	<49.8 49.8	<50.2 50.2
Total GRO-DRO		<50.1 50.1	<50.3 50.3	3460 49.8	2940 50.3	98.8 49.8	<50.2 50.2
Total TPH		<50.1 50.1	<50.3 50.3	3700 49.8	3160 50.3	98.8 49.8	<50.2 50.2

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641879

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 2RP-4967

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Nov-01-19 04:56 pm

Report Date: 04-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641879-007	641879-008	641879-009	641879-010	641879-011	641879-012
	<i>Field Id:</i>	FS28	FS29	FS30	FS31	FS32	FS33
	<i>Depth:</i>	4- ft	5.5- ft	6- ft	6- ft	6- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-30-19 15:00	Oct-31-19 10:30	Oct-31-19 10:40	Oct-31-19 10:45	Oct-31-19 10:50	Oct-31-19 10:55
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 18:11	Nov-01-19 18:11	Nov-01-19 18:11	Nov-01-19 18:11	Nov-01-19 18:11	Nov-01-19 18:11
	<i>Analyzed:</i>	Nov-02-19 13:50	Nov-02-19 14:11	Nov-02-19 14:31	Nov-02-19 14:51	Nov-02-19 16:07	Nov-02-19 16:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996
Chloride by EPA 300	<i>Extracted:</i>	Nov-01-19 17:11	Nov-01-19 17:11	Nov-01-19 17:11	Nov-01-19 17:11	Nov-01-19 17:11	Nov-01-19 17:11
	<i>Analyzed:</i>	Nov-01-19 22:49	Nov-01-19 22:56	Nov-01-19 23:02	Nov-01-19 23:09	Nov-01-19 23:15	Nov-01-19 23:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		117 9.92	84.2 10.1	115 10.1	38.5 10.1	19.1 10.0	50.0 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	** ** *	** ** *	** ** *	** ** *	** ** *	** ** *
	<i>Analyzed:</i>	Nov-02-19 01:32	Nov-02-19 01:52	Nov-02-19 02:12	Nov-02-19 02:32	Nov-02-19 02:52	Nov-02-19 03:12
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8
Total GRO-DRO		<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8
Total TPH		<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<49.8 49.8	<49.8 49.8

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641879

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id: 2RP-4967

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Nov-01-19 04:56 pm

Report Date: 04-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641879-013	641879-014	641879-015			
	<i>Field Id:</i>	FS34	FS35	FS36			
	<i>Depth:</i>	7- ft	8- ft	8- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Oct-31-19 11:00	Oct-31-19 11:05	Oct-31-19 11:10			
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 18:11	Nov-01-19 18:11	Nov-01-19 18:11			
	<i>Analyzed:</i>	Nov-02-19 16:48	Nov-02-19 17:08	Nov-02-19 17:29			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101			
Toluene		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101			
Ethylbenzene		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101			
m,p-Xylenes		<0.00197 0.00197	<0.00198 0.00198	<0.00202 0.00202			
o-Xylene		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101			
Total Xylenes		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101			
Total BTEX		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101			
Chloride by EPA 300	<i>Extracted:</i>	Nov-01-19 17:11	Nov-01-19 17:11	Nov-01-19 17:11			
	<i>Analyzed:</i>	Nov-01-19 23:41	Nov-02-19 00:00	Nov-02-19 00:06			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		<10.0 10.0	186 9.98	25.1 9.94			
TPH by SW8015 Mod	<i>Extracted:</i>	*** ** *	*** ** *	*** ** *			
	<i>Analyzed:</i>	Nov-02-19 03:32	Nov-02-19 05:12	Nov-02-19 06:11			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<49.8 49.8	<50.1 50.1			
Diesel Range Organics (DRO)		<50.1 50.1	<49.8 49.8	<50.1 50.1			
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<49.8 49.8	<50.1 50.1			
Total GRO-DRO		<50.1 50.1	<49.8 49.8	<50.1 50.1			
Total TPH		<50.1 50.1	<49.8 49.8	<50.1 50.1			

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: FS22
Lab Sample Id: 641879-001

Matrix: Soil
Date Collected: 10.30.19 14.15

Date Received: 11.01.19 16.56
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	794	50.1	mg/kg	11.01.19 21.45		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.01.19 23.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.01.19 23.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.01.19 23.13	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.01.19 23.13	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.01.19 23.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.01.19 23.13	
o-Terphenyl	84-15-1	93	%	70-135	11.01.19 23.13	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: FS22
Lab Sample Id: 641879-001

Matrix: Soil
Date Collected: 10.30.19 14.15

Date Received: 11.01.19 16.56
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.02.19 11.48	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.02.19 11.48	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.02.19 11.48	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 11.48	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.02.19 11.48	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.02.19 11.48	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.02.19 11.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.02.19 11.48		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.02.19 11.48		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: FS23
Lab Sample Id: 641879-002

Matrix: Soil
Date Collected: 10.30.19 14.20

Date Received: 11.01.19 16.56
Sample Depth: 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	355	9.96	mg/kg	11.01.19 22.04		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.01.19 23.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.01.19 23.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.01.19 23.33	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.01.19 23.33	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.01.19 23.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.01.19 23.33	
o-Terphenyl	84-15-1	95	%	70-135	11.01.19 23.33	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS23**
Lab Sample Id: 641879-002

Matrix: Soil
Date Collected: 10.30.19 14.20

Date Received: 11.01.19 16.56
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.02.19 12.08	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.02.19 12.08	U	1
Ethylbenzene	100-41-4	0.00736	0.00101	mg/kg	11.02.19 12.08		1
m,p-Xylenes	179601-23-1	0.0163	0.00201	mg/kg	11.02.19 12.08		1
o-Xylene	95-47-6	0.00665	0.00101	mg/kg	11.02.19 12.08		1
Total Xylenes	1330-20-7	0.0230	0.00101	mg/kg	11.02.19 12.08		1
Total BTEX		0.0303	0.00101	mg/kg	11.02.19 12.08		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.02.19 12.08		
1,4-Difluorobenzene	540-36-3	97	%	70-130	11.02.19 12.08		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS24**
Lab Sample Id: 641879-003

Matrix: Soil
Date Collected: 10.30.19 14.25

Date Received: 11.01.19 16.56
Sample Depth: 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1370	49.9	mg/kg	11.01.19 22.11		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	182	49.8	mg/kg	11.01.19 23.53		1
Diesel Range Organics (DRO)	C10C28DRO	3280	49.8	mg/kg	11.01.19 23.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	238	49.8	mg/kg	11.01.19 23.53		1
Total GRO-DRO	PHC628	3460	49.8	mg/kg	11.01.19 23.53		1
Total TPH	PHC635	3700	49.8	mg/kg	11.01.19 23.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	141	%	70-135	11.01.19 23.53	**
o-Terphenyl	84-15-1	122	%	70-135	11.01.19 23.53	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS24**
 Lab Sample Id: 641879-003

Matrix: Soil
 Date Collected: 10.30.19 14.25

Date Received: 11.01.19 16.56
 Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0102	0.0102	mg/kg	11.02.19 12.28	U	1
Toluene	108-88-3	<0.0102	0.0102	mg/kg	11.02.19 12.28	U	1
Ethylbenzene	100-41-4	<0.0102	0.0102	mg/kg	11.02.19 12.28	U	1
m,p-Xylenes	179601-23-1	0.0470	0.0204	mg/kg	11.02.19 12.28		1
o-Xylene	95-47-6	0.0436	0.0102	mg/kg	11.02.19 12.28		1
Total Xylenes	1330-20-7	0.0906	0.0102	mg/kg	11.02.19 12.28		1
Total BTEX		0.0906	0.0102	mg/kg	11.02.19 12.28		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	131	%	70-130	11.02.19 12.28	**	
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.02.19 12.28		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: FS25
Lab Sample Id: 641879-004

Matrix: Soil
Date Collected: 10.30.19 14.30

Date Received: 11.01.19 16.56
Sample Depth: 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1240	50.2	mg/kg	11.01.19 22.17		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	157	50.3	mg/kg	11.02.19 00.33		1
Diesel Range Organics (DRO)	C10C28DRO	2780	50.3	mg/kg	11.02.19 00.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	221	50.3	mg/kg	11.02.19 00.33		1
Total GRO-DRO	PHC628	2940	50.3	mg/kg	11.02.19 00.33		1
Total TPH	PHC635	3160	50.3	mg/kg	11.02.19 00.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	11.02.19 00.33	
o-Terphenyl	84-15-1	112	%	70-135	11.02.19 00.33	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS25**
 Lab Sample Id: 641879-004

Matrix: Soil
 Date Collected: 10.30.19 14.30

Date Received: 11.01.19 16.56
 Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.02.19 12.49	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.02.19 12.49	U	1
Ethylbenzene	100-41-4	0.0166	0.00101	mg/kg	11.02.19 12.49		1
m,p-Xylenes	179601-23-1	0.0356	0.00201	mg/kg	11.02.19 12.49		1
o-Xylene	95-47-6	0.0191	0.00101	mg/kg	11.02.19 12.49		1
Total Xylenes	1330-20-7	0.0547	0.00101	mg/kg	11.02.19 12.49		1
Total BTEX		0.0713	0.00101	mg/kg	11.02.19 12.49		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.02.19 12.49		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.02.19 12.49		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS26**
Lab Sample Id: 641879-005

Matrix: Soil
Date Collected: 10.30.19 14.50

Date Received: 11.01.19 16.56
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	476	10.1	mg/kg	11.01.19 22.23		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.02.19 00.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	98.8	49.8	mg/kg	11.02.19 00.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.02.19 00.52	U	1
Total GRO-DRO	PHC628	98.8	49.8	mg/kg	11.02.19 00.52		1
Total TPH	PHC635	98.8	49.8	mg/kg	11.02.19 00.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.02.19 00.52	
o-Terphenyl	84-15-1	108	%	70-135	11.02.19 00.52	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS26**
 Lab Sample Id: 641879-005

Matrix: Soil
 Date Collected: 10.30.19 14.50

Date Received: 11.01.19 16.56
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.02.19 13.09	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.02.19 13.09	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.02.19 13.09	U	1
m,p-Xylenes	179601-23-1	0.0128	0.00200	mg/kg	11.02.19 13.09		1
o-Xylene	95-47-6	0.00219	0.00100	mg/kg	11.02.19 13.09		1
Total Xylenes	1330-20-7	0.0150	0.00100	mg/kg	11.02.19 13.09		1
Total BTEX		0.0150	0.00100	mg/kg	11.02.19 13.09		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	131	%	70-130	11.02.19 13.09	**	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.02.19 13.09		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: FS27
Lab Sample Id: 641879-006

Matrix: Soil
Date Collected: 10.30.19 14.55

Date Received: 11.01.19 16.56
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	346	9.94	mg/kg	11.01.19 22.43		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 01.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 01.12	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 01.12	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 01.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.02.19 01.12	
o-Terphenyl	84-15-1	102	%	70-135	11.02.19 01.12	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: FS27
Lab Sample Id: 641879-006

Matrix: Soil
Date Collected: 10.30.19 14.55

Date Received: 11.01.19 16.56
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00102	0.00102	mg/kg	11.02.19 13.30	U	1
Toluene	108-88-3	<0.00102	0.00102	mg/kg	11.02.19 13.30	U	1
Ethylbenzene	100-41-4	<0.00102	0.00102	mg/kg	11.02.19 13.30	U	1
m,p-Xylenes	179601-23-1	<0.00203	0.00203	mg/kg	11.02.19 13.30	U	1
o-Xylene	95-47-6	<0.00102	0.00102	mg/kg	11.02.19 13.30	U	1
Total Xylenes	1330-20-7	<0.00102	0.00102	mg/kg	11.02.19 13.30	U	1
Total BTEX		<0.00102	0.00102	mg/kg	11.02.19 13.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.02.19 13.30		
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.02.19 13.30		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS28**
Lab Sample Id: 641879-007

Matrix: Soil
Date Collected: 10.30.19 15.00

Date Received: 11.01.19 16.56
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	117	9.92	mg/kg	11.01.19 22.49		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 01.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 01.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 01.32	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 01.32	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 01.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.02.19 01.32	
o-Terphenyl	84-15-1	99	%	70-135	11.02.19 01.32	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS28**
 Lab Sample Id: 641879-007

Matrix: Soil
 Date Collected: 10.30.19 15.00

Date Received: 11.01.19 16.56
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.02.19 13.50	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.02.19 13.50	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.02.19 13.50	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 13.50	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.02.19 13.50	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.02.19 13.50	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.02.19 13.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.02.19 13.50		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.02.19 13.50		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS29**
Lab Sample Id: 641879-008

Matrix: Soil
Date Collected: 10.31.19 10.30

Date Received: 11.01.19 16.56
Sample Depth: 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	84.2	10.1	mg/kg	11.01.19 22.56		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 01.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 01.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 01.52	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 01.52	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 01.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.02.19 01.52	
o-Terphenyl	84-15-1	102	%	70-135	11.02.19 01.52	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS29**
 Lab Sample Id: 641879-008

Matrix: Soil
 Date Collected: 10.31.19 10.30

Date Received: 11.01.19 16.56
 Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.02.19 14.11	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.02.19 14.11	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.02.19 14.11	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 14.11	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.02.19 14.11	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.02.19 14.11	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.02.19 14.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.02.19 14.11		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.02.19 14.11		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS30**
Lab Sample Id: 641879-009

Matrix: Soil
Date Collected: 10.31.19 10.40

Date Received: 11.01.19 16.56
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	115	10.1	mg/kg	11.01.19 23.02		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 02.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 02.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 02.12	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 02.12	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 02.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.02.19 02.12	
o-Terphenyl	84-15-1	97	%	70-135	11.02.19 02.12	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS30**
 Lab Sample Id: 641879-009

Matrix: Soil
 Date Collected: 10.31.19 10.40

Date Received: 11.01.19 16.56
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.02.19 14.31	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.02.19 14.31	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.02.19 14.31	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 14.31	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.02.19 14.31	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.02.19 14.31	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.02.19 14.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.02.19 14.31		
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.02.19 14.31		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS31**
Lab Sample Id: 641879-010

Matrix: Soil
Date Collected: 10.31.19 10.45

Date Received: 11.01.19 16.56
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38.5	10.1	mg/kg	11.01.19 23.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 02.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 02.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 02.32	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 02.32	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 02.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.02.19 02.32	
o-Terphenyl	84-15-1	96	%	70-135	11.02.19 02.32	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS31**
 Lab Sample Id: 641879-010

Matrix: Soil
 Date Collected: 10.31.19 10.45

Date Received: 11.01.19 16.56
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.02.19 14.51	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.02.19 14.51	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.02.19 14.51	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 14.51	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.02.19 14.51	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.02.19 14.51	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.02.19 14.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.02.19 14.51		
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.02.19 14.51		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: FS32
Lab Sample Id: 641879-011

Matrix: Soil
Date Collected: 10.31.19 10.50

Date Received: 11.01.19 16.56
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.1	10.0	mg/kg	11.01.19 23.15		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.02.19 02.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.02.19 02.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.02.19 02.52	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.02.19 02.52	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.02.19 02.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.02.19 02.52	
o-Terphenyl	84-15-1	93	%	70-135	11.02.19 02.52	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS32**
 Lab Sample Id: 641879-011

Matrix: Soil
 Date Collected: 10.31.19 10.50

Date Received: 11.01.19 16.56
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.02.19 16.07	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.02.19 16.07	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.02.19 16.07	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 16.07	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.02.19 16.07	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.02.19 16.07	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.02.19 16.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.02.19 16.07		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.02.19 16.07		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS33**
Lab Sample Id: 641879-012

Matrix: Soil
Date Collected: 10.31.19 10.55

Date Received: 11.01.19 16.56
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.0	10.1	mg/kg	11.01.19 23.34		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.02.19 03.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.02.19 03.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.02.19 03.12	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.02.19 03.12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.02.19 03.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.02.19 03.12	
o-Terphenyl	84-15-1	97	%	70-135	11.02.19 03.12	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS33**
 Lab Sample Id: 641879-012

Matrix: Soil
 Date Collected: 10.31.19 10.55

Date Received: 11.01.19 16.56
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.02.19 16.27	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.02.19 16.27	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.02.19 16.27	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.02.19 16.27	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.02.19 16.27	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.02.19 16.27	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.02.19 16.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	11.02.19 16.27		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.02.19 16.27		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS34**
Lab Sample Id: 641879-013

Matrix: Soil
Date Collected: 10.31.19 11.00

Date Received: 11.01.19 16.56
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	11.01.19 23.41	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106225

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 03.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 03.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 03.32	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 03.32	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 03.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.02.19 03.32	
o-Terphenyl	84-15-1	95	%	70-135	11.02.19 03.32	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS34**
 Lab Sample Id: 641879-013

Matrix: Soil
 Date Collected: 10.31.19 11.00

Date Received: 11.01.19 16.56
 Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000986	0.000986	mg/kg	11.02.19 16.48	U	1
Toluene	108-88-3	<0.000986	0.000986	mg/kg	11.02.19 16.48	U	1
Ethylbenzene	100-41-4	<0.000986	0.000986	mg/kg	11.02.19 16.48	U	1
m,p-Xylenes	179601-23-1	<0.00197	0.00197	mg/kg	11.02.19 16.48	U	1
o-Xylene	95-47-6	<0.000986	0.000986	mg/kg	11.02.19 16.48	U	1
Total Xylenes	1330-20-7	<0.000986	0.000986	mg/kg	11.02.19 16.48	U	1
Total BTEX		<0.000986	0.000986	mg/kg	11.02.19 16.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.02.19 16.48		
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.02.19 16.48		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS35**
Lab Sample Id: 641879-014

Matrix: Soil
Date Collected: 10.31.19 11.05

Date Received: 11.01.19 16.56
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	186	9.98	mg/kg	11.02.19 00.00		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106309

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.02.19 05.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.02.19 05.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.02.19 05.12	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.02.19 05.12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.02.19 05.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.02.19 05.12	
o-Terphenyl	84-15-1	93	%	70-135	11.02.19 05.12	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS35**
 Lab Sample Id: 641879-014

Matrix: Soil
 Date Collected: 10.31.19 11.05

Date Received: 11.01.19 16.56
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	11.02.19 17.08	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	11.02.19 17.08	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	11.02.19 17.08	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.02.19 17.08	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	11.02.19 17.08	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	11.02.19 17.08	U	1
Total BTEX		<0.000990	0.000990	mg/kg	11.02.19 17.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.02.19 17.08		
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.02.19 17.08		



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS36**
Lab Sample Id: 641879-015

Matrix: Soil
Date Collected: 10.31.19 11.10

Date Received: 11.01.19 16.56
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106298

Date Prep: 11.01.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.1	9.94	mg/kg	11.02.19 00.06		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106309

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 06.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 06.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 06.11	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 06.11	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 06.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.02.19 06.11	
o-Terphenyl	84-15-1	99	%	70-135	11.02.19 06.11	



Certificate of Analytical Results 641879

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS36**
 Lab Sample Id: 641879-015

Matrix: Soil
 Date Collected: 10.31.19 11.10

Date Received: 11.01.19 16.56
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 18.11

Basis: Wet Weight

Seq Number: 3106303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.02.19 17.29	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.02.19 17.29	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.02.19 17.29	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.02.19 17.29	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.02.19 17.29	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.02.19 17.29	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.02.19 17.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.02.19 17.29		
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.02.19 17.29		



Flagging Criteria

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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow II State Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3106298

MB Sample Id: 7689507-1-BLK

Matrix: Solid

LCS Sample Id: 7689507-1-BKS

Prep Method: E300P

Date Prep: 11.01.19

LCSD Sample Id: 7689507-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	264	106	263	105	90-110	0	20	mg/kg	11.01.19 21:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3106298

Parent Sample Id: 641879-001

Matrix: Soil

MS Sample Id: 641879-001 S

Prep Method: E300P

Date Prep: 11.01.19

MSD Sample Id: 641879-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	794	1010	2100	129	2090	130	90-110	0	20	mg/kg	11.01.19 21:51	X

Analytical Method: Chloride by EPA 300

Seq Number: 3106298

Parent Sample Id: 641879-011

Matrix: Soil

MS Sample Id: 641879-011 S

Prep Method: E300P

Date Prep: 11.01.19

MSD Sample Id: 641879-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	19.1	196	245	115	251	115	90-110	2	20	mg/kg	11.01.19 23:21	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106225

MB Sample Id: 7689452-1-BLK

Matrix: Solid

LCS Sample Id: 7689452-1-BKS

Prep Method: SW8015P

Date Prep: 11.01.19

LCSD Sample Id: 7689452-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	855	86	897	90	70-135	5	35	mg/kg	11.01.19 17:16	
Diesel Range Organics (DRO)	<50.0	1000	940	94	959	96	70-135	2	35	mg/kg	11.01.19 17:16	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		108		105		70-135	%	11.01.19 17:16
o-Terphenyl	104		104		99		70-135	%	11.01.19 17:16

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106309

MB Sample Id: 7689504-1-BLK

Matrix: Solid

LCS Sample Id: 7689504-1-BKS

Prep Method: SW8015P

Date Prep: 11.01.19

LCSD Sample Id: 7689504-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	870	87	887	89	70-135	2	35	mg/kg	11.02.19 04:32	
Diesel Range Organics (DRO)	<50.0	1000	917	92	931	93	70-135	2	35	mg/kg	11.02.19 04:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		107		104		70-135	%	11.02.19 04:32
o-Terphenyl	104		99		101		70-135	%	11.02.19 04:32

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106225

Matrix: Solid

MB Sample Id: 7689452-1-BLK

Prep Method: SW8015P

Date Prep: 11.01.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.01.19 16:57	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106309

Matrix: Solid

MB Sample Id: 7689504-1-BLK

Prep Method: SW8015P

Date Prep: 11.01.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.02.19 04:12	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106225

Matrix: Soil

Parent Sample Id: 641840-001

MS Sample Id: 641840-001 S

Prep Method: SW8015P

Date Prep: 11.01.19

MSD Sample Id: 641840-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	932	93	930	93	70-135	0	35	mg/kg	11.01.19 18:16	
Diesel Range Organics (DRO)	<50.1	1000	992	99	992	99	70-135	0	35	mg/kg	11.01.19 18:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		117		70-135	%	11.01.19 18:16
o-Terphenyl	111		109		70-135	%	11.01.19 18:16

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106309

Parent Sample Id: 641879-014

Matrix: Soil

MS Sample Id: 641879-014 S

Prep Method: SW8015P

Date Prep: 11.01.19

MSD Sample Id: 641879-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	946	94	965	97	70-135	2	35	mg/kg	11.04.19 09:24	
Diesel Range Organics (DRO)	<50.3	1010	1230	122	1100	110	70-135	11	35	mg/kg	11.04.19 09:24	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		116		70-135	%	11.04.19 09:24
o-Terphenyl	107		109		70-135	%	11.04.19 09:24

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106303

MB Sample Id: 7689513-1-BLK

Matrix: Solid

LCS Sample Id: 7689513-1-BKS

Prep Method: SW5030B

Date Prep: 11.01.19

LCSD Sample Id: 7689513-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0927	93	0.0962	96	70-130	4	35	mg/kg	11.02.19 09:51	
Toluene	<0.00100	0.100	0.0919	92	0.0971	97	70-130	6	35	mg/kg	11.02.19 09:51	
Ethylbenzene	<0.00100	0.100	0.0944	94	0.100	100	71-129	6	35	mg/kg	11.02.19 09:51	
m,p-Xylenes	<0.00200	0.200	0.190	95	0.204	102	70-135	7	35	mg/kg	11.02.19 09:51	
o-Xylene	<0.00100	0.100	0.0954	95	0.102	102	71-133	7	35	mg/kg	11.02.19 09:51	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		98		70-130	%	11.02.19 09:51
4-Bromofluorobenzene	110		106		106		70-130	%	11.02.19 09:51

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106303

Parent Sample Id: 641879-001

Matrix: Soil

MS Sample Id: 641879-001 S

Prep Method: SW5030B

Date Prep: 11.01.19

MSD Sample Id: 641879-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0979	98	0.0840	85	70-130	15	35	mg/kg	11.02.19 10:32	
Toluene	<0.00100	0.100	0.0962	96	0.0819	82	70-130	16	35	mg/kg	11.02.19 10:32	
Ethylbenzene	<0.00100	0.100	0.0980	98	0.0828	83	71-129	17	35	mg/kg	11.02.19 10:32	
m,p-Xylenes	<0.00201	0.201	0.198	99	0.166	83	70-135	18	35	mg/kg	11.02.19 10:32	
o-Xylene	<0.00100	0.100	0.100	100	0.0847	85	71-133	17	35	mg/kg	11.02.19 10:32	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		100		70-130	%	11.02.19 10:32
4-Bromofluorobenzene	117		111		70-130	%	11.02.19 10:32

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

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

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

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

Work Order No: 441877

Page ____ of ____

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

[illegible]

of Containers	
(8016)	
A 0=8021)	
EPA 300.0)	
TAT starts the day received by the	

[illegible]

Total	200.7 / 60:10	200.8 / 60:20	
Circle Method(s) and Metal(s) to be analyzed			
8RCRA	13PPM	Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn
TCLP / SPLP	60:10	8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
			1631 / 245.1 / 7470 / 7471 : Hg

office. Xencio 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 Xencio, a minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencio, 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
		11/11/19 10:51e			



Chain of Custody

Work Order No.:

670777

Houston, TX (281) 240-4200 Dallas, TX (714) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 565-3443 Lubbock, TX (808) 794-1794

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-448-8900) Tucson, AZ (520-298-4444)

www.kentico.com

Page _____ of _____

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	dmoir@ltenv.com, jmcarter@ltenv.com
Project Name:	Elk Valley / 11446 ELL		

www.xmtrco.com
Page 6 of 6

Work Order Comments

Program: UST/PT ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐

State of Project

Reporting Level II ☐ Level III ☐ S/T/UST ☐ RRP ☐ Level IV ☐

Deliverables: EDO ☐ ADAPT ☐ Other:

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride	Sample Comments
F532	S	10/31/19	1050	6'	1	X	X	X	Composite
F533			1055	6'		X	X	X	
F534			1100	7'		X	X	X	
F535			1105	8'		X	X	X	
F536			1110	8'		X	X	X	

Signature of this document and refund amount of samples constitutes a valid purchase order from client company to XenoCo, its affiliates and subcontractors. It assigns standard terms and conditions to XenoCo. XenoCo 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 XenoCo. A refundable charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to XenoCo, 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>	11/1/19 16:54			

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

TCLP / SPLP 6010, BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

Printed Date: 09/14/19 16:54

Analytical Report 642025

for
LT Environmental, Inc.

Project Manager: Dan Moir
Elk Wallow II State Battery

06-NOV-19

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **642025**

Elk Wallow II State Battery

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) 642025. 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. 642025 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

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

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

**Sample Cross Reference 642025****LT Environmental, Inc., Arvada, CO**

Elk Wallow II State Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS37	S	11-01-19 10:30	8 ft	642025-001
FS38	S	11-01-19 10:35	9 ft	642025-002
FS39	S	11-01-19 10:40	10 ft	642025-003
FS40	S	11-01-19 10:45	10 ft	642025-004
FS41	S	11-01-19 10:50	10 ft	642025-005
FS42	S	11-01-19 10:55	10 ft	642025-006
FS43	S	11-01-19 12:40	10 ft	642025-007
FS44	S	11-01-19 12:50	10 ft	642025-008
FS45	S	11-01-19 13:00	10 ft	642025-009
FS46	S	11-01-19 13:10	10 ft	642025-010
FS47	S	11-01-19 13:40	10 ft	642025-011
FS48	S	11-01-19 13:50	10 ft	642025-012
FS49	S	11-01-19 14:00	10 ft	642025-013
FS50	S	11-01-19 14:10	10 ft	642025-014



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Elk Wallow II State Battery

Project ID:
Work Order Number(s): 642025

Report Date: 06-NOV-19
Date Received: 11/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106563 TPH by SW8015 Mod

Lab Sample ID 642025-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Motor Oil Range Hydrocarbons (MRO) Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.

Samples in the analytical batch are: 642025-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014

Outlier/s are due to possible matrix interference.

Batch: LBA-3106575 BTEX by EPA 8021B

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



Certificate of Analysis Summary 642025

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Nov-05-19 08:38 am

Report Date: 06-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	642025-001	642025-002	642025-003	642025-004	642025-005	642025-006
	<i>Field Id:</i>	FS37	FS38	FS39	FS40	FS41	FS42
	<i>Depth:</i>	8- ft	9- ft	10- ft	10- ft	10- ft	10- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-01-19 10:30	Nov-01-19 10:35	Nov-01-19 10:40	Nov-01-19 10:45	Nov-01-19 10:50	Nov-01-19 10:55
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-05-19 11:11	Nov-05-19 11:11	Nov-05-19 11:11	Nov-05-19 11:11	Nov-05-19 11:11	Nov-05-19 11:11
	<i>Analyzed:</i>	Nov-05-19 12:26	Nov-05-19 12:45	Nov-05-19 13:05	Nov-05-19 13:24	Nov-05-19 13:43	Nov-05-19 14:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Toluene		<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
o-Xylene		<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Total Xylenes		<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Total BTEX		<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Nov-05-19 12:11	Nov-05-19 12:11	Nov-05-19 12:11	Nov-05-19 12:11	Nov-05-19 12:11	Nov-05-19 12:11
	<i>Analyzed:</i>	Nov-05-19 15:44	Nov-05-19 15:50	Nov-05-19 15:57	Nov-05-19 16:03	Nov-05-19 16:10	Nov-05-19 16:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		27.3 10.0	16.9 10.0	20.9 10.1	18.2 9.92	11.4 9.88	<9.98 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-05-19 17:00	Nov-05-19 17:00	Nov-05-19 17:00	Nov-05-19 17:00	Nov-05-19 17:00	Nov-05-19 17:00
	<i>Analyzed:</i>	Nov-05-19 19:35	Nov-05-19 20:34	Nov-05-19 20:54	Nov-05-19 21:13	Nov-05-19 21:33	Nov-05-19 21:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.2 50.2	<50.3 50.3	<50.3 50.3
Diesel Range Organics (DRO)		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.2 50.2	<50.3 50.3	<50.3 50.3
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.2 50.2	<50.3 50.3	<50.3 50.3
Total GRO-DRO		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.2 50.2	<50.3 50.3	<50.3 50.3
Total TPH		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.2 50.2	<50.3 50.3	<50.3 50.3

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

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 642025



LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Nov-05-19 08:38 am

Report Date: 06-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	642025-007	642025-008	642025-009	642025-010	642025-011	642025-012
	<i>Field Id:</i>	FS43	FS44	FS45	FS46	FS47	FS48
	<i>Depth:</i>	10- ft	10- ft	10- ft	10- ft	10- ft	10- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-01-19 12:40	Nov-01-19 12:50	Nov-01-19 13:00	Nov-01-19 13:10	Nov-01-19 13:40	Nov-01-19 13:50
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-05-19 11:11	Nov-05-19 11:11	Nov-05-19 11:11	Nov-05-19 11:11	Nov-05-19 11:11	Nov-05-19 11:11
	<i>Analyzed:</i>	Nov-05-19 14:21	Nov-05-19 14:40	Nov-05-19 14:59	Nov-05-19 15:18	Nov-05-19 16:22	Nov-05-19 16:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Toluene		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
m,p-Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
o-Xylene		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Total BTEX		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Nov-05-19 12:11	Nov-05-19 12:11	Nov-05-19 12:11	Nov-05-19 12:11	Nov-05-19 12:11	Nov-05-19 12:11
	<i>Analyzed:</i>	Nov-05-19 16:43	Nov-05-19 16:49	Nov-05-19 17:09	Nov-05-19 17:15	Nov-05-19 17:22	Nov-05-19 17:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		13.4 9.88	<9.86 9.86	211 10.1	127 10.1	241 10.1	627 D 199
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-05-19 17:00	Nov-05-19 17:00	Nov-05-19 17:00	Nov-05-19 17:00	Nov-05-19 17:00	Nov-05-19 17:00
	<i>Analyzed:</i>	Nov-05-19 22:12	Nov-05-19 22:32	Nov-05-19 22:51	Nov-05-19 23:11	Nov-05-19 23:50	Nov-06-19 00:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.1 50.1	<50.2 50.2
Diesel Range Organics (DRO)		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.1 50.1	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.1 50.1	<50.2 50.2
Total GRO-DRO		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.1 50.1	<50.2 50.2
Total TPH		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.1 50.1	<50.2 50.2

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 642025

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Nov-05-19 08:38 am

Report Date: 06-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	642025-013	642025-014				
	Field Id:	FS49	FS50				
	Depth:	10- ft	10- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Nov-01-19 14:00	Nov-01-19 14:10				
BTEX by EPA 8021B	Extracted:	Nov-05-19 11:11	Nov-05-19 11:11				
	Analyzed:	Nov-05-19 17:01	Nov-05-19 17:20				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00101 0.00101	<0.00100 0.00100				
Toluene		<0.00101 0.00101	<0.00100 0.00100				
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100				
m,p-Xylenes		<0.00202 0.00202	<0.00200 0.00200				
o-Xylene		<0.00101 0.00101	<0.00100 0.00100				
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100				
Total BTEX		<0.00101 0.00101	<0.00100 0.00100				
Chloride by EPA 300	Extracted:	Nov-05-19 12:11	Nov-05-19 12:11				
	Analyzed:	Nov-05-19 17:34	Nov-05-19 17:41				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		<10.0 10.0	383 D 202				
TPH by SW8015 Mod	Extracted:	Nov-05-19 17:00	Nov-05-19 17:00				
	Analyzed:	Nov-06-19 00:29	Nov-06-19 00:49				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<49.9 49.9				
Diesel Range Organics (DRO)		<50.3 50.3	<49.9 49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<49.9 49.9				
Total GRO-DRO		<50.3 50.3	<49.9 49.9				
Total TPH		<50.3 50.3	<49.9 49.9				

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: FS37
Lab Sample Id: 642025-001

Matrix: Soil
Date Collected: 11.01.19 10.30

Date Received: 11.05.19 08.38
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.3	10.0	mg/kg	11.05.19 15.44		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.05.19 19.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.05.19 19.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.05.19 19.35	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.05.19 19.35	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.05.19 19.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.05.19 19.35	
o-Terphenyl	84-15-1	116	%	70-135	11.05.19 19.35	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS37**
 Lab Sample Id: 642025-001

Matrix: Soil
 Date Collected: 11.01.19 10.30

Date Received: 11.05.19 08.38
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.05.19 12.26	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.05.19 12.26	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.05.19 12.26	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.05.19 12.26	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.05.19 12.26	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.05.19 12.26	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.05.19 12.26	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111		%	70-130	11.05.19 12.26	
1,4-Difluorobenzene	540-36-3	100		%	70-130	11.05.19 12.26	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS38**
Lab Sample Id: 642025-002

Matrix: Soil
Date Collected: 11.01.19 10.35

Date Received: 11.05.19 08.38
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.9	10.0	mg/kg	11.05.19 15.50		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.05.19 20.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.05.19 20.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.05.19 20.34	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.05.19 20.34	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.05.19 20.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	11.05.19 20.34	
o-Terphenyl	84-15-1	102	%	70-135	11.05.19 20.34	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS38**
 Lab Sample Id: 642025-002

Matrix: Soil
 Date Collected: 11.01.19 10.35

Date Received: 11.05.19 08.38
 Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.05.19 12.45	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.05.19 12.45	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.05.19 12.45	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.05.19 12.45	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.05.19 12.45	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.05.19 12.45	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.05.19 12.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.05.19 12.45		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.05.19 12.45		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS39**
Lab Sample Id: 642025-003

Matrix: Soil
Date Collected: 11.01.19 10.40

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.9	10.1	mg/kg	11.05.19 15.57		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.05.19 20.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.05.19 20.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.05.19 20.54	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.05.19 20.54	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.05.19 20.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.05.19 20.54	
o-Terphenyl	84-15-1	112	%	70-135	11.05.19 20.54	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS39**
 Lab Sample Id: 642025-003

Matrix: Soil
 Date Collected: 11.01.19 10.40

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.05.19 13.05	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.05.19 13.05	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.05.19 13.05	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.05.19 13.05	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.05.19 13.05	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.05.19 13.05	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.05.19 13.05	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.05.19 13.05		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.05.19 13.05		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS40**
Lab Sample Id: 642025-004

Matrix: Soil
Date Collected: 11.01.19 10.45

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.2	9.92	mg/kg	11.05.19 16.03		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.05.19 21.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.05.19 21.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.05.19 21.13	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.05.19 21.13	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.05.19 21.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.05.19 21.13	
o-Terphenyl	84-15-1	106	%	70-135	11.05.19 21.13	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS40**
 Lab Sample Id: 642025-004

Matrix: Soil
 Date Collected: 11.01.19 10.45

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.05.19 13.24	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.05.19 13.24	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.05.19 13.24	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.05.19 13.24	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.05.19 13.24	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.05.19 13.24	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.05.19 13.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.05.19 13.24		
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.05.19 13.24		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS41**
 Lab Sample Id: 642025-005

Matrix: Soil
 Date Collected: 11.01.19 10.50

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.4	9.88	mg/kg	11.05.19 16.10		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.05.19 21.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.05.19 21.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.05.19 21.33	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.05.19 21.33	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.05.19 21.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.05.19 21.33	
o-Terphenyl	84-15-1	117	%	70-135	11.05.19 21.33	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS41**
 Lab Sample Id: 642025-005

Matrix: Soil
 Date Collected: 11.01.19 10.50

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.05.19 13.43	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.05.19 13.43	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.05.19 13.43	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.05.19 13.43	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.05.19 13.43	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.05.19 13.43	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.05.19 13.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.05.19 13.43		
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.05.19 13.43		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS42**
Lab Sample Id: 642025-006

Matrix: Soil
Date Collected: 11.01.19 10.55

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	11.05.19 16.16	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.05.19 21.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.05.19 21.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.05.19 21.53	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.05.19 21.53	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.05.19 21.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.05.19 21.53	
o-Terphenyl	84-15-1	107	%	70-135	11.05.19 21.53	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS42**
 Lab Sample Id: 642025-006

Matrix: Soil
 Date Collected: 11.01.19 10.55

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.05.19 14.02	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.05.19 14.02	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.05.19 14.02	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.05.19 14.02	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.05.19 14.02	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.05.19 14.02	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.05.19 14.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.05.19 14.02		
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.05.19 14.02		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS43**
 Lab Sample Id: 642025-007

Matrix: Soil
 Date Collected: 11.01.19 12.40

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.4	9.88	mg/kg	11.05.19 16.43		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.05.19 22.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.05.19 22.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.05.19 22.12	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.05.19 22.12	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.05.19 22.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.05.19 22.12	
o-Terphenyl	84-15-1	119	%	70-135	11.05.19 22.12	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS43**
 Lab Sample Id: 642025-007

Matrix: Soil
 Date Collected: 11.01.19 12.40

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.05.19 14.21	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.05.19 14.21	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.05.19 14.21	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.05.19 14.21	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.05.19 14.21	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.05.19 14.21	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.05.19 14.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.05.19 14.21		
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.05.19 14.21		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS44**
Lab Sample Id: 642025-008

Matrix: Soil
Date Collected: 11.01.19 12.50

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.86	9.86	mg/kg	11.05.19 16.49	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.05.19 22.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.05.19 22.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.05.19 22.32	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.05.19 22.32	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.05.19 22.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.05.19 22.32	
o-Terphenyl	84-15-1	104	%	70-135	11.05.19 22.32	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS44**
 Lab Sample Id: 642025-008

Matrix: Soil
 Date Collected: 11.01.19 12.50

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.05.19 14.40	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.05.19 14.40	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.05.19 14.40	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.05.19 14.40	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.05.19 14.40	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.05.19 14.40	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.05.19 14.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.05.19 14.40		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.05.19 14.40		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS45**
Lab Sample Id: 642025-009

Matrix: Soil
Date Collected: 11.01.19 13.00

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	211	10.1	mg/kg	11.05.19 17.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.05.19 22.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.05.19 22.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.05.19 22.51	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.05.19 22.51	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.05.19 22.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.05.19 22.51	
o-Terphenyl	84-15-1	108	%	70-135	11.05.19 22.51	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS45**
 Lab Sample Id: 642025-009

Matrix: Soil
 Date Collected: 11.01.19 13.00

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.05.19 14.59	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.05.19 14.59	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.05.19 14.59	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.05.19 14.59	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.05.19 14.59	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.05.19 14.59	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.05.19 14.59	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102		%	70-130	11.05.19 14.59	
4-Bromofluorobenzene	460-00-4	124		%	70-130	11.05.19 14.59	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS46**
Lab Sample Id: 642025-010

Matrix: Soil
Date Collected: 11.01.19 13.10

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	127	10.1	mg/kg	11.05.19 17.15		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.05.19 23.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.05.19 23.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.05.19 23.11	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.05.19 23.11	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.05.19 23.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.05.19 23.11	
o-Terphenyl	84-15-1	113	%	70-135	11.05.19 23.11	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS46**
 Lab Sample Id: 642025-010

Matrix: Soil
 Date Collected: 11.01.19 13.10

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.05.19 15.18	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.05.19 15.18	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.05.19 15.18	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.05.19 15.18	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.05.19 15.18	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.05.19 15.18	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.05.19 15.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.05.19 15.18		
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.05.19 15.18		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS47**
Lab Sample Id: 642025-011

Matrix: Soil
Date Collected: 11.01.19 13.40

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	241	10.1	mg/kg	11.05.19 17.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.05.19 23.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.05.19 23.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.05.19 23.50	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.05.19 23.50	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.05.19 23.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.05.19 23.50	
o-Terphenyl	84-15-1	114	%	70-135	11.05.19 23.50	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS47**
 Lab Sample Id: 642025-011

Matrix: Soil
 Date Collected: 11.01.19 13.40

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.05.19 16.22	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.05.19 16.22	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.05.19 16.22	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.05.19 16.22	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.05.19 16.22	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.05.19 16.22	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.05.19 16.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.05.19 16.22		
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.05.19 16.22		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS48**
Lab Sample Id: 642025-012

Matrix: Soil
Date Collected: 11.01.19 13.50

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	627	199	mg/kg	11.06.19 11.56	D	20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.06.19 00.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.06.19 00.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.06.19 00.10	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.06.19 00.10	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.06.19 00.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.06.19 00.10	
o-Terphenyl	84-15-1	115	%	70-135	11.06.19 00.10	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS48**
 Lab Sample Id: 642025-012

Matrix: Soil
 Date Collected: 11.01.19 13.50

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.05.19 16.41	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.05.19 16.41	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.05.19 16.41	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.05.19 16.41	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.05.19 16.41	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.05.19 16.41	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.05.19 16.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.05.19 16.41		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.05.19 16.41		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS49**
Lab Sample Id: 642025-013

Matrix: Soil
Date Collected: 11.01.19 14.00

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	11.05.19 17.34	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.06.19 00.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.06.19 00.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.06.19 00.29	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.06.19 00.29	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.06.19 00.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.06.19 00.29	
o-Terphenyl	84-15-1	120	%	70-135	11.06.19 00.29	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS49**
 Lab Sample Id: 642025-013

Matrix: Soil
 Date Collected: 11.01.19 14.00

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.05.19 17.01	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.05.19 17.01	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.05.19 17.01	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.05.19 17.01	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.05.19 17.01	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.05.19 17.01	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.05.19 17.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.05.19 17.01		
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.05.19 17.01		



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS50**
Lab Sample Id: 642025-014

Matrix: Soil
Date Collected: 11.01.19 14.10

Date Received: 11.05.19 08.38
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106581

Date Prep: 11.05.19 12.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	383	202	mg/kg	11.06.19 12.02	D	20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106563

Date Prep: 11.05.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.06.19 00.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.06.19 00.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.06.19 00.49	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.06.19 00.49	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.06.19 00.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.06.19 00.49	
o-Terphenyl	84-15-1	103	%	70-135	11.06.19 00.49	



Certificate of Analytical Results 642025

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS50**
 Lab Sample Id: 642025-014

Matrix: Soil
 Date Collected: 11.01.19 14.10

Date Received: 11.05.19 08.38
 Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.05.19 11.11

Basis: Wet Weight

Seq Number: 3106575

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.05.19 17.20	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.05.19 17.20	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.05.19 17.20	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.05.19 17.20	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.05.19 17.20	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.05.19 17.20	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.05.19 17.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	11.05.19 17.20		
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.05.19 17.20		



Flagging Criteria

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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3106581

MB Sample Id: 7689635-1-BLK

Matrix: Solid

LCS Sample Id: 7689635-1-BKS

Prep Method: E300P

Date Prep: 11.05.19

LCSD Sample Id: 7689635-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	235	94	236	94	90-110	0	20	mg/kg	11.05.19 14:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3106581

Parent Sample Id: 641998-001

Matrix: Soil

MS Sample Id: 641998-001 S

Prep Method: E300P

Date Prep: 11.05.19

MSD Sample Id: 641998-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1010	252	1280	107	1270	103	90-110	1	20	mg/kg	11.05.19 14:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3106581

Parent Sample Id: 642025-006

Matrix: Soil

MS Sample Id: 642025-006 S

Prep Method: E300P

Date Prep: 11.05.19

MSD Sample Id: 642025-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.57	198	220	106	222	106	90-110	1	20	mg/kg	11.05.19 16:23	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106563

MB Sample Id: 7689687-1-BLK

Matrix: Solid

LCS Sample Id: 7689687-1-BKS

Prep Method: SW8015P

Date Prep: 11.05.19

LCSD Sample Id: 7689687-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	975	98	897	90	70-135	8	35	mg/kg	11.05.19 18:37	
Diesel Range Organics (DRO)	<50.0	1000	1080	108	978	98	70-135	10	35	mg/kg	11.05.19 18:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		123		114		70-135	%	11.05.19 18:37
o-Terphenyl	110		127		118		70-135	%	11.05.19 18:37

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106563

Matrix: Solid

MB Sample Id: 7689687-1-BLK

Prep Method: SW8015P

Date Prep: 11.05.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.05.19 18:17	

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

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

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

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



LT Environmental, Inc.

Elk Wallow II State Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106563

Parent Sample Id: 642025-001

Matrix: Soil

MS Sample Id: 642025-001 S

Prep Method: SW8015P

Date Prep: 11.05.19

MSD Sample Id: 642025-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	996	1030	103	957	96	70-135	7	35	mg/kg	11.05.19 19:55	
Diesel Range Organics (DRO)	<49.8	996	1150	115	1050	105	70-135	9	35	mg/kg	11.05.19 19:55	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		119		70-135	%	11.05.19 19:55
o-Terphenyl	134		123		70-135	%	11.05.19 19:55

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106575

MB Sample Id: 7689641-1-BLK

Matrix: Solid

LCS Sample Id: 7689641-1-BKS

Prep Method: SW5030B

Date Prep: 11.05.19

LCSD Sample Id: 7689641-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0896	90	0.0951	95	70-130	6	35	mg/kg	11.05.19 10:11	
Toluene	<0.00100	0.100	0.0906	91	0.0961	96	70-130	6	35	mg/kg	11.05.19 10:11	
Ethylbenzene	<0.00100	0.100	0.0912	91	0.0965	97	71-129	6	35	mg/kg	11.05.19 10:11	
m,p-Xylenes	<0.00200	0.200	0.195	98	0.207	104	70-135	6	35	mg/kg	11.05.19 10:11	
o-Xylene	<0.00100	0.100	0.0974	97	0.104	104	71-133	7	35	mg/kg	11.05.19 10:11	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		99		101		70-130	%	11.05.19 10:11
4-Bromofluorobenzene	109		113		113		70-130	%	11.05.19 10:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106575

Parent Sample Id: 642025-001

Matrix: Soil

MS Sample Id: 642025-001 S

Prep Method: SW5030B

Date Prep: 11.05.19

MSD Sample Id: 642025-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.102	102	0.101	101	70-130	1	35	mg/kg	11.05.19 11:22	
Toluene	<0.00100	0.100	0.100	100	0.101	101	70-130	1	35	mg/kg	11.05.19 11:22	
Ethylbenzene	<0.00100	0.100	0.0991	99	0.100	100	71-129	1	35	mg/kg	11.05.19 11:22	
m,p-Xylenes	<0.00200	0.200	0.210	105	0.215	108	70-135	2	35	mg/kg	11.05.19 11:22	
o-Xylene	<0.00100	0.100	0.107	107	0.109	109	71-133	2	35	mg/kg	11.05.19 11:22	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		70-130	%	11.05.19 11:22
4-Bromofluorobenzene	115		117		70-130	%	11.05.19 11:22

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

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

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: 642025

Houston, TX (281) 240-4200 Dallas, TX (214) 962-0000 San Antonio, TX (210) 609-3334
 Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1295
 Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2100)

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

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:	Elk Wellbore II State Battery	Turn Around	☐
Project Number:		Route:	264
P.O. Number:	2RP-4967	Rush:	
Sampler's Name:	Robert McAttee	Due Date:	

SAMPLE RECEIPT	Temp Blank	☒ Yes ☐ No	Well Ice:	☒ Yes ☐ No
	Temperature (°C):	0.4	Thermometer ID	
	Received Inlet:	☒ Yes ☐ No	Correction Factor:	-0.2
	Cooler Custody Seal:	☒ Yes ☐ No	Total Containers:	14

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST										Work Order Notes	
FS37	S	11/01/11	1030	8'	1	X	X	X												TAT starts the day received by the lab, if received by 4:30pm
FS38			1035	9'	X	X	X	X												
FS39			1040	10'	X	X	X	X												
FS40			1045	10'	X	X	X	X												
FS41			1050	10'	X	X	X	X												
FS42			1055	10'	X	X	X	X												
FS43			1240	10'	X	X	X	X												
FS44			1250	10'	X	X	X	X												
FS45			1500	10'	X	X	X	X												
FS46			1310	10'	X	X	X	X												

Total 200.7 / 6010 200.8 / 6020:

 BRCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

a. 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 \$25.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time



Chain of Custody

Work Order No: U42025

Houston, TX (281) 240-4230 Dallas, TX (214) 902-0200 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575) 382-7550 Phoenix, AZ (480) 355-0800 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

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Project Manager:	Dan Mofr	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	dmofo@xenco.com mclittle@xenco.com
Project Name:	Elk Water 11 study Rating	Turn Around	
Project Number:		Routine	☐
P.O. Number:	2RP-4967	Rush	2 day
Sampler's Name:	Robert McAlfee	Due Date:	

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

SAMPLE RECEIPT	Temp Blank:	Yes	No	Well log:	Yes	No	ANALYSIS REQUEST			Work Order Notes
							TPH (EPA 8015)	BTEX (EPA 9-8021)	Chloride (EPA 300.0)	
Temperature (°C):										
Received Inlet:	Yes	No								
Cooler Custody Seals:	Yes	No								
Sample Custody Seals:	Yes	No								
Correction Factor:										
Total Containers:										

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 9-8021)	Chloride (EPA 300.0)	TAI starts the day received by the lab, if received by 4:30pm	Sample Comments
FS47	S	11/01/19	1340	10'	1	X	X	X		
FS48			1350	10'		X	X	X		
FS49			1400	10'		X	X	X		
FS50			1410	10'		X	X	X		Composite

Total	200.7 / 6010	200.8 / 6020:	8RCRA 130PM Texas 11 N 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				
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	11/5/19 0838			



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/05/2019 08:38:00 AM

Work Order #: 642025

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 11/05/2019

Checklist reviewed by:

Jessica Kramer

Date: 11/05/2019



Analytical Report 643535

for

LT Environmental, Inc.

Project Manager: Dan Moir

Elk Wallow II State Battery

02.20.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



02.20.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **643535**

Elk Wallow II State Battery

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) 643535. 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. 643535 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

John Builes
Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 643535

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS25 A	S	11.14.2019 10:50	7.5 ft	643535-001



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Elk Wallow II State Battery*

Project ID:

Work Order Number(s): 643535

Report Date: 02.20.2020

Date Received: 11.18.2019

Sample receipt non conformances and comments:

Revised report issued to correct depth mistake on COC. JB 2/20/20

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107843 BTEX by EPA 8021B

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



Certificate of Analysis Summary 643535

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State Battery

Project Id:

Date Received in Lab: Mon 11.18.2019 14:15

Contact: Dan Moir

Report Date: 02.20.2020 15:09

Project Location:

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	643535-001					
	Field Id:	FS25 A					
	Depth:	7.5- ft					
	Matrix:	SOIL					
	Sampled:	11.14.2019 10:50					
BTEX by EPA 8021B	Extracted:	11.18.2019 15:11					
	Analyzed:	11.18.2019 20:40					
	Units/RL:	mg/kg RL					
Benzene		<0.00100 0.00100					
Toluene		<0.00100 0.00100					
Ethylbenzene		<0.00100 0.00100					
m,p-Xylenes		<0.00200 0.00200					
o-Xylene		<0.00100 0.00100					
Total Xylenes		<0.00100 0.00100					
Total BTEX		<0.00100 0.00100					
Chloride by EPA 300	Extracted:	11.18.2019 15:11					
	Analyzed:	11.18.2019 20:25					
	Units/RL:	mg/kg RL					
Chloride		1160 50.4					
TPH by SW8015 Mod	Extracted:	11.18.2019 15:00					
	Analyzed:	11.18.2019 16:32					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3					
Diesel Range Organics (DRO)		<50.3 50.3					
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3					
Total GRO-DRO		<50.3 50.3					
Total TPH		<50.3 50.3					

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

John Builes
Project Manager



Certificate of Analytical Results 643535

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS25 A**
 Lab Sample Id: 643535-001

Matrix: Soil
 Date Collected: 11.14.2019 10:50

Date Received: 11.18.2019 14:15
 Sample Depth: 7.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107844

Date Prep: 11.18.2019 15:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1160	50.4	mg/kg	11.18.2019 20:25		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107867

Date Prep: 11.18.2019 15:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.18.2019 16:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.18.2019 16:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.18.2019 16:32	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.18.2019 16:32	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.18.2019 16:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.18.2019 16:32	
o-Terphenyl	84-15-1	114	%	70-135	11.18.2019 16:32	



Certificate of Analytical Results 643535

LT Environmental, Inc., Arvada, CO

Elk Wallow II State Battery

Sample Id: **FS25 A**
 Lab Sample Id: 643535-001

Matrix: Soil
 Date Collected: 11.14.2019 10:50

Date Received: 11.18.2019 14:15
 Sample Depth: 7.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.18.2019 15:11

Basis: Wet Weight

Seq Number: 3107843

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.18.2019 20:40	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.18.2019 20:40	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.18.2019 20:40	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.18.2019 20:40	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.18.2019 20:40	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.18.2019 20:40	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.18.2019 20:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.18.2019 20:40		
4-Bromofluorobenzene	460-00-4	107	%	70-130	11.18.2019 20:40		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3107844

MB Sample Id: 7690574-1-BLK

Matrix: Solid

LCS Sample Id: 7690574-1-BKS

Prep Method: E300P

Date Prep: 11.18.2019

LCSD Sample Id: 7690574-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	254	102	255	102	90-110	0	20	mg/kg	11.18.2019 18:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3107844

Parent Sample Id: 643519-001

Matrix: Soil

MS Sample Id: 643519-001 S

Prep Method: E300P

Date Prep: 11.18.2019

MSD Sample Id: 643519-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.3	200	215	100	219	102	90-110	2	20	mg/kg	11.18.2019 19:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3107844

Parent Sample Id: 643534-003

Matrix: Soil

MS Sample Id: 643534-003 S

Prep Method: E300P

Date Prep: 11.18.2019

MSD Sample Id: 643534-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.27	200	209	101	209	101	90-110	0	20	mg/kg	11.18.2019 20:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107867

MB Sample Id: 7690572-1-BLK

Matrix: Solid

LCS Sample Id: 7690572-1-BKS

Prep Method: SW8015P

Date Prep: 11.18.2019

LCSD Sample Id: 7690572-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1060	106	1040	104	70-135	2	35	mg/kg	11.18.2019 12:06	
Diesel Range Organics (DRO)	<50.0	1000	1210	121	1160	116	70-135	4	35	mg/kg	11.18.2019 12:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		132		130		70-135	%	11.18.2019 12:06
o-Terphenyl	111		127		119		70-135	%	11.18.2019 12:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107867

Matrix: Solid

MB Sample Id: 7690572-1-BLK

Prep Method: SW8015P

Date Prep: 11.18.2019

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.18.2019 11:45	

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

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

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

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



LT Environmental, Inc.
Elk Wallow II State Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107867

Parent Sample Id: 643519-001

Matrix: Soil

MS Sample Id: 643519-001 S

Prep Method: SW8015P

Date Prep: 11.18.2019

MSD Sample Id: 643519-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	842	84	956	96	70-135	13	35	mg/kg	11.18.2019 14:48	
Diesel Range Organics (DRO)	<50.1	1000	1070	107	1100	110	70-135	3	35	mg/kg	11.18.2019 14:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		123		70-135	%	11.18.2019 14:48
o-Terphenyl	114		116		70-135	%	11.18.2019 14:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3107843

MB Sample Id: 7690575-1-BLK

Matrix: Solid

LCS Sample Id: 7690575-1-BKS

Prep Method: SW5030B

Date Prep: 11.18.2019

LCSD Sample Id: 7690575-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.101	101	0.0963	96	70-130	5	35	mg/kg	11.18.2019 15:39	
Toluene	<0.000500	0.100	0.0999	100	0.0953	95	70-130	5	35	mg/kg	11.18.2019 15:39	
Ethylbenzene	<0.00100	0.100	0.0990	99	0.0946	95	71-129	5	35	mg/kg	11.18.2019 15:39	
m,p-Xylenes	<0.00200	0.200	0.209	105	0.200	100	70-135	4	35	mg/kg	11.18.2019 15:39	
o-Xylene	<0.00100	0.100	0.104	104	0.0987	99	71-133	5	35	mg/kg	11.18.2019 15:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		102		70-130	%	11.18.2019 15:39
4-Bromofluorobenzene	100		107		107		70-130	%	11.18.2019 15:39

Analytical Method: BTEX by EPA 8021B

Seq Number: 3107843

Parent Sample Id: 643519-001

Matrix: Soil

MS Sample Id: 643519-001 S

Prep Method: SW5030B

Date Prep: 11.18.2019

MSD Sample Id: 643519-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.107	106	0.0946	95	70-130	12	35	mg/kg	11.18.2019 16:17	
Toluene	<0.000505	0.101	0.105	104	0.0921	92	70-130	13	35	mg/kg	11.18.2019 16:17	
Ethylbenzene	<0.00101	0.101	0.103	102	0.0898	90	71-129	14	35	mg/kg	11.18.2019 16:17	
m,p-Xylenes	<0.00202	0.202	0.218	108	0.188	94	70-135	15	35	mg/kg	11.18.2019 16:17	
o-Xylene	<0.00101	0.101	0.109	108	0.0936	94	71-133	15	35	mg/kg	11.18.2019 16:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		106		70-130	%	11.18.2019 16:17
4-Bromofluorobenzene	113		113		70-130	%	11.18.2019 16:17

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

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

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

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

Work Order No: 043535

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Page 1 of 1

Work Order Comments	
Program: USTRPST	☐ PRP ☐ brownfields ☐ RC ☐ superfund ☐
State of Project:	
Reporting Level II	☐ level III ☐ STRUST ☐ RRP ☐ level IV ☐
Deliverables: EDD	☐ ADAPT ☐ Other:

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
FS25A	S	11/14/19	1050	8.5'	1	x	x	x	Composite

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: BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
1631 / 245.1 / 7470 / 7471 - H

At Signature of this document, the requirement of samples constitutes a valid purchase order from client company to Xonco, the affiliates and subcontractors. It assigns standard terms and conditions to Xonco. Xonco 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 Xonco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xonco, 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>Field Mgr</i>	<i>Colton</i>	11/18/19 17:15			



Analytical Report 647911

for

LT Environmental, Inc.

Project Manager: Dan Moir

Elk Wallow II State#1

02.20.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



02.20.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **647911**

Elk Wallow II State#1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 647911. 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. 647911 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink, appearing to read 'JB', is written over a horizontal line.

John Builes
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 647911****LT Environmental, Inc., Arvada, CO**

Elk Wallow II State#1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS25B	S	01.03.2020 12:10	8 ft	647911-001
FS48A	S	01.03.2020 13:25	10.5 ft	647911-002
FS71A	S	01.03.2020 14:25	5 ft	647911-003



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Elk Wallow II State#1*

Project ID:
Work Order Number(s): 647911

Report Date: 02.20.2020
Date Received: 01.03.2020

Sample receipt non conformances and comments:

Revised report issued to correct transcription errors on the COC. JB 2/20/20

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3112361 BTEX by EPA 8021B

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



Certificate of Analysis Summary 647911

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow II State#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri 01.03.2020 16:50

Report Date: 02.20.2020 15:22

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	647911-001	647911-002	647911-003			
	Field Id:	FS25B	FS48A	FS71A			
	Depth:	8- ft	10.5- ft	5- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	01.03.2020 12:10	01.03.2020 13:25	01.03.2020 14:25			
BTEX by EPA 8021B	Extracted:	01.03.2020 18:00	01.03.2020 18:00	01.03.2020 18:00			
	Analyzed:	01.03.2020 19:46	01.03.2020 20:03	01.03.2020 20:21			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198			
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198			
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198			
m,p-Xylenes		<0.00399 0.00399	<0.00395 0.00395	<0.00395 0.00395			
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198			
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198			
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198			
Chloride by EPA 300	Extracted:	01.03.2020 18:00	01.03.2020 18:00	01.03.2020 18:00			
	Analyzed:	01.03.2020 22:13	01.03.2020 22:19	01.03.2020 22:26			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		201 9.88	<9.98 9.98	18.1 10.0			
TPH by SW8015 Mod	Extracted:	01.03.2020 18:00	01.03.2020 18:00	01.03.2020 18:00			
	Analyzed:	01.06.2020 14:54	01.06.2020 15:43	01.06.2020 16:04			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2	<50.2 50.2			
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2	<50.2 50.2			
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<50.2 50.2			
Total GRO-DRO		<50.2 50.2	<50.2 50.2	<50.2 50.2			
Total TPH		<50.2 50.2	<50.2 50.2	<50.2 50.2			

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

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

John Builes
Project Manager



Certificate of Analytical Results 647911

LT Environmental, Inc., Arvada, CO

Elk Wallow II State#1

Sample Id: **FS25B**
Lab Sample Id: 647911-001

Matrix: Soil
Date Collected: 01.03.2020 12:10

Date Received: 01.03.2020 16:50
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.2020 18:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	201	9.88	mg/kg	01.03.2020 22:13		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112450

Date Prep: 01.03.2020 18:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.06.2020 14:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.06.2020 14:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.06.2020 14:54	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.06.2020 14:54	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.06.2020 14:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	01.06.2020 14:54	
o-Terphenyl	84-15-1	116	%	70-135	01.06.2020 14:54	



Certificate of Analytical Results 647911

LT Environmental, Inc., Arvada, CO

Elk Wallow II State#1

Sample Id: **FS25B**
Lab Sample Id: 647911-001

Matrix: Soil
Date Collected: 01.03.2020 12:10

Date Received: 01.03.2020 16:50
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.2020 18:00

Basis: Wet Weight

Seq Number: 3112361

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.03.2020 19:46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.03.2020 19:46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.03.2020 19:46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.03.2020 19:46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.03.2020 19:46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.03.2020 19:46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.03.2020 19:46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.03.2020 19:46		
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.03.2020 19:46		



Certificate of Analytical Results 647911

LT Environmental, Inc., Arvada, CO

Elk Wallow II State#1

Sample Id: **FS48A** Matrix: Soil Date Received: 01.03.2020 16:50
 Lab Sample Id: 647911-002 Date Collected: 01.03.2020 13:25 Sample Depth: 10.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 01.03.2020 18:00 Basis: Wet Weight
 Seq Number: 3112369

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	01.03.2020 22:19	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 01.03.2020 18:00 Basis: Wet Weight
 Seq Number: 3112450

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.06.2020 15:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.06.2020 15:43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.06.2020 15:43	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.06.2020 15:43	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.06.2020 15:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	01.06.2020 15:43	
o-Terphenyl	84-15-1	111	%	70-135	01.06.2020 15:43	



Certificate of Analytical Results 647911

LT Environmental, Inc., Arvada, CO

Elk Wallow II State#1

Sample Id: **FS48A**
Lab Sample Id: 647911-002

Matrix: Soil
Date Collected: 01.03.2020 13:25

Date Received: 01.03.2020 16:50
Sample Depth: 10.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112361

Prep Method: SW5030B

% Moisture:

Date Prep: 01.03.2020 18:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.03.2020 20:03	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.03.2020 20:03	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.03.2020 20:03	U	1
m,p-Xylenes	179601-23-1	<0.00395	0.00395	mg/kg	01.03.2020 20:03	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.03.2020 20:03	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.03.2020 20:03	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.03.2020 20:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.03.2020 20:03		
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.03.2020 20:03		



Certificate of Analytical Results 647911

LT Environmental, Inc., Arvada, CO

Elk Wallow II State#1

Sample Id: **FS71A** Matrix: Soil Date Received: 01.03.2020 16:50
 Lab Sample Id: 647911-003 Date Collected: 01.03.2020 14:25 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 01.03.2020 18:00 Basis: Wet Weight
 Seq Number: 3112369

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.1	10.0	mg/kg	01.03.2020 22:26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 01.03.2020 18:00 Basis: Wet Weight
 Seq Number: 3112450

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.06.2020 16:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.06.2020 16:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.06.2020 16:04	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.06.2020 16:04	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.06.2020 16:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	01.06.2020 16:04	
o-Terphenyl	84-15-1	103	%	70-135	01.06.2020 16:04	



Certificate of Analytical Results 647911

LT Environmental, Inc., Arvada, CO

Elk Wallow II State#1

Sample Id: **FS71A**
Lab Sample Id: 647911-003

Matrix: Soil
Date Collected: 01.03.2020 14:25

Date Received: 01.03.2020 16:50
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.2020 18:00

Basis: Wet Weight

Seq Number: 3112361

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.03.2020 20:21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.03.2020 20:21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.03.2020 20:21	U	1
m,p-Xylenes	179601-23-1	<0.00395	0.00395	mg/kg	01.03.2020 20:21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.03.2020 20:21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.03.2020 20:21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.03.2020 20:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	01.03.2020 20:21	
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.03.2020 20:21	



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Elk Wallow II State#1

Analytical Method: Chloride by EPA 300

Seq Number: 3112369

MB Sample Id: 7693706-1-BLK

Matrix: Solid

LCS Sample Id: 7693706-1-BKS

Prep Method: E300P

Date Prep: 01.03.2020

LCSD Sample Id: 7693706-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	258	103	258	103	90-110	0	20	mg/kg	01.03.2020 21:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3112369

Parent Sample Id: 647906-017

Matrix: Soil

MS Sample Id: 647906-017 S

Prep Method: E300P

Date Prep: 01.03.2020

MSD Sample Id: 647906-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	48.5	200	263	107	262	107	90-110	0	20	mg/kg	01.03.2020 21:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3112369

Parent Sample Id: 647913-002

Matrix: Soil

MS Sample Id: 647913-002 S

Prep Method: E300P

Date Prep: 01.03.2020

MSD Sample Id: 647913-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.5	202	223	103	238	111	90-110	7	20	mg/kg	01.03.2020 22:56	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112450

MB Sample Id: 7693710-1-BLK

Matrix: Solid

LCS Sample Id: 7693710-1-BKS

Prep Method: SW8015P

Date Prep: 01.03.2020

LCSD Sample Id: 7693710-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1140	114	1190	119	70-135	4	35	mg/kg	01.04.2020 04:31	
Diesel Range Organics (DRO)	<50.0	1000	1250	125	1290	129	70-135	3	35	mg/kg	01.04.2020 04:31	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		123		133		70-135	%	01.04.2020 04:31
o-Terphenyl	118		120		122		70-135	%	01.04.2020 04:31

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112450

Matrix: Solid

MB Sample Id: 7693710-1-BLK

Prep Method: SW8015P

Date Prep: 01.03.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.04.2020 04:31	

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

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

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

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



LT Environmental, Inc.

Elk Wallow II State#1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112450

Parent Sample Id: 647913-015

Matrix: Soil

MS Sample Id: 647913-015 S

Prep Method: SW8015P

Date Prep: 01.03.2020

MSD Sample Id: 647913-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1240	124	1200	120	70-135	3	35	mg/kg	01.04.2020 05:10	
Diesel Range Organics (DRO)	<50.0	1000	1330	133	1290	129	70-135	3	35	mg/kg	01.04.2020 05:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	134		134		70-135	%	01.04.2020 05:10
o-Terphenyl	124		123		70-135	%	01.04.2020 05:10

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112361

MB Sample Id: 7693688-1-BLK

Matrix: Solid

LCS Sample Id: 7693688-1-BKS

Prep Method: SW5030B

Date Prep: 01.03.2020

LCSD Sample Id: 7693688-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0921	92	0.0970	97	70-130	5	35	mg/kg	01.03.2020 14:16	
Toluene	<0.00200	0.100	0.0928	93	0.0978	98	70-130	5	35	mg/kg	01.03.2020 14:16	
Ethylbenzene	<0.00200	0.100	0.0911	91	0.0958	96	71-129	5	35	mg/kg	01.03.2020 14:16	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.199	100	70-135	5	35	mg/kg	01.03.2020 14:16	
o-Xylene	<0.00200	0.100	0.0926	93	0.0973	97	71-133	5	35	mg/kg	01.03.2020 14:16	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		100		70-130	%	01.03.2020 14:16
4-Bromofluorobenzene	100		102		102		70-130	%	01.03.2020 14:16

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112361

Parent Sample Id: 647862-001

Matrix: Soil

MS Sample Id: 647862-001 S

Prep Method: SW5030B

Date Prep: 01.03.2020

MSD Sample Id: 647862-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.111	112	0.112	113	70-130	1	35	mg/kg	01.03.2020 14:50	
Toluene	<0.00198	0.0990	0.108	109	0.109	110	70-130	1	35	mg/kg	01.03.2020 14:50	
Ethylbenzene	<0.00198	0.0990	0.101	102	0.104	105	71-129	3	35	mg/kg	01.03.2020 14:50	
m,p-Xylenes	<0.000746	0.198	0.206	104	0.212	107	70-135	3	35	mg/kg	01.03.2020 14:50	
o-Xylene	<0.00198	0.0990	0.101	102	0.104	105	71-133	3	35	mg/kg	01.03.2020 14:50	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		99		70-130	%	01.03.2020 14:50
4-Bromofluorobenzene	102		99		70-130	%	01.03.2020 14:50

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

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

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

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



Chain of Custody

Received by OCD: 2/28/2020 1:17:38 PM

Page 647 of 647

Work Order No: 6947911

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Page 1 of 1

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund

State of Project:

Reporting Level II ☐ Level III ☐ UST ☐ RP ☐ Level IV ☐

Deliverables: EDD ☐ ADAPT ☐ Other: ☐

ANALYSIS REQUEST

Work Order Notes

Turn Around

Routine ☐

Rush: 3 days

Due Date: 1/9/20

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Project Manager: Dan Moir

Company Name: LT Environmental, Inc., Permian office

Address: 3300 North A Street

City, State ZIP: Midland, TX 79705

Phone: (432) 236-3849

Bill to: (if different) Kyle Littrell

Company Name: XTO Energy

Address:

City, State ZIP:

Email: jhill@litterv.com, dmair@litterv.com

Project Name: Elk well 11 skt #1

Project Number:

P.O. Number: 2RP-4967

Sampler's Name: Jeremy Hill

Turn Around

Routine ☐

Rush: 3 days

Due Date: 1/9/20

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Project Name:

Project Number:

P.O. Number:

Sampler's Name:

Turn Around

Routine ☐

Rush: 3 days

Due Date: 1/9/20

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

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Total Containers: 3

Temp Blank/ Yes No

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Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

Total 200.7 / 6010 200.8 / 6020:

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

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

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signatures of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Bill to: (if different)

Company Name:

Address:

City, State ZIP:

Email:

Turn Around

Routine ☐

Rush: 3 days

Due Date: 1/9/20

Thermometer ID

Correction Factor

Total Containers: 3

Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Correction Factor

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Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

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Temp Blank/ Yes No

Wet Ice/ Yes No

Thermometer ID

Company Name:

Address:

City, State ZIP:

Email:

Turn Around

Routine ☐

Rush: 3 days

Due Date: 1/9/20

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City, State ZIP:

Email:

Turn Around

Routine ☐

Rush: 3 days

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