

NM OIL CONSERVATION

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88220
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

SEP 18 2017

RECEIVED

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141
Revised August 8, 2011

SEP 18 2017

Submit Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

RECEIVED

Release Notification and Corrective Action

NAB1726334149

OPERATOR
☒ Initial Report ☐ Final Report

Name of Company: XTO Energy 260737 (BOPCO)	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Poker Lake Unit 184 Battery (Delaware C) (API for PLU #184)	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-31990
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LOCATION OF RELEASE

Unit Letter G	Section 6	Township 24S	Range 30E	Feet from the 1740	North/South Line North	Feet from the 2125	East/West Line East	County Eddy
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Latitude 32.249172° Longitude -103.919028°

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 11.09 BPW	Volume Recovered 0 BPW
Source of Release FWKO pop-off valves	Date and Hour of Occurrence 8/16/2017 7 am	Date and Hour of Discovery 8/16/2017 7 am
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

Salt accumulated within the dump valves of two free water knock out vessels and fluid was forced through the pop-off valves. The vessels were isolated and repaired.

Describe Area Affected and Cleanup Action Taken.*

The leak affected approximately 2500 square feet of caliche pad and about 100 square feet of pasture to the west of the battery earthen berm. Facility equipment was power washed.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC 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 NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC 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.

OIL CONSERVATION DIVISION

Signature:	Approved by Environmental Specialist:	
Printed Name: Amy C. Ruth	Approval Date: 9/18/17	Expiration Date: N/A
Title: Environmental Coordinator	Conditions of Approval: see attached	
E-mail Address: Amy_Ruth@xtoenergy.com	Attached:	
Date: 9/18/2017 Phone: 432-661-0571		

* Attach Additional Sheets If Necessary

Please refer to the New Mexico Oil
Conservation Division Website for
updated form(s) at:
[http://www.emnrd.state.nm.us/
OCD/forms.html](http://www.emnrd.state.nm.us/OCD/forms.html) Thank you

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State of New Mexico
Energy Minerals and Natural
Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAB1726334149
District RP	2RP-4397
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Garrett Green	Contact Telephone: (575) 200-0729
Contact email: garrett.green@exxonmobil.com	Incident #: 2RP-4397
Contact mailing address: 3104 E. Greene Street, Carlsbad, New Mexico, 88220	

Location of Release Source

Latitude N 32.249172 Longitude W 103.919028
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Poker Lake Unit 184 Battery (Delaware C)	Site Type: Production Well Facility
Date Release Discovered: 8/16/2017	API# (if applicable): 30-015-31990

Unit Letter	Section	Township	Range	County
G	6	24S	30E	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):	Volume Recovered (bbls):
☒ Produced Water	Volume Released (bbls): 11.09	Volume Recovered (bbls): 0
	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

Salt accumulated within the dump valves of two free water knock out vessels and fluid was forced through the pop-off valves. The vessels were isolated and repaired.

Incident ID	nAB1726334149
District RP	2RP-4397
Facility ID	
Application ID	

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

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Garrett Green</u>	Title: <u>SSHE Coordinator</u>
Signature: <u></u>	Date: <u>6/28/2023</u>
email: <u>garrett.green@exxonmobil.com</u>	Telephone: <u>(575) 200-0729</u>
<u>OCD Only</u> Received by: _____ Date: _____	

Incident ID	nAB1726334149
District RP	2RP-4397
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	nAB1726334149
District RP	2RP-4397
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Garrett Green Title: SSHE Coordinator

Signature:  Date: 6/28/2023

email: garrett.green@exxonmobil.com Telephone: (575) 200-0729

OCD Only

Received by: Shelly Wells Date: 6/29/2023

Incident ID	nAB1726334149
District RP	2RP-4397
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Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Garrett Green Title: SSHE Coordinator

Signature:  Date: 6/28/2023

email: garrett.green@exxonmobil.com Telephone: (575) 200-0729

OCD Only

Received by: Shelly Wells Date: 6/29/2023

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by:  Date: 07/03/2023

Printed Name: Ashley Maxwell Title: Environmental Specialist



June 28, 2023

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: Closure Request Addendum
Poker Lake Unit 184 Battery (Delaware C)
Incident Numbers nAB1514636338, nAB1726334149, and nAB1726332553
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following addendum to the original *Closure Request* dated November 8, 2019. This addendum provides an update to the depth to groundwater determination activities at the Poker Lake Unit 184 Battery (Delaware C) (Site) in response to the denial of the original *Closure Request* by the New Mexico Oil Conservation Division (NMOCD). In the denial, NMOCD indicated that the depth to groundwater assessment was not sufficient. Based on the additional depth to groundwater determination activities described below, XTO is submitting this *Closure Request Addendum* and requesting closure for Incident Numbers nAB1514636338, nAB1726334149, and nAB1726332553.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit G, Section 6, Township 24 South, Range 30 East, in Eddy County, New Mexico (32.249498°, -103.918614°) and is associated with oil and gas exploration and production operations on Federal land managed by the Bureau of Land Management (BLM).

On May 18, 2015, corrosion of a flow line caused the release of approximately 7 barrels (bbls) of oil and 38 bbls of produced water. The well was shut down until a joint of pipe could be replaced. The release impacted approximately 3,610 square feet of caliche pad and approximately 250 square feet of pasture. Approximately 5 bbls of oil and 5 bbls of produced water were recovered. The former operator reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on May 22, 2015. The release was assigned Remediation Permit (RP) Number 2RP-3014 and Incident Number nAB1514636338.

On August 16, 2017, salt accumulated in the dump valves of two free water knock-out vessels, causing fluid to be forced out through the pop-off valves. Approximately 11 bbls of produced water were released. The release affected approximately 2,500 square feet of caliche pad and 100 square feet of pasture. XTO reported the release to the NMOCD on a Form C-141 on September 18, 2017. The release was assigned RP Number 2RP-4397 and Incident Number nAB1726334149.

On August 18, 2017, salt accumulated in the dump valves of process vessels, causing fluids to be forced out of the facility flare. Approximately 35.96 bbls of produced water and 2.3 bbls of crude oil were released. The release affected approximately 450 square feet of caliche pad and 7,000 square feet of pasture. Approximately 18.8 bbls of produced water and 1.2 bbls of crude oil were recovered. XTO

XTO Energy, Inc.
Closure Request Addendum
Poker Lake Unit 184 Battery (Delaware C)

reported the release to the NMOCD on a Form C-141 on September 18, 2017. The release was assigned RP Number 2RP-4396 and Incident Number nAB1726332553.

The releases were included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the NMOCD effective November 13, 2018. The purpose of the Compliance Agreement was to ensure that reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with 19.15.29 of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018.

The three releases occurred in the same general area of well pad; therefore, excavation and sampling activities were completed to address and close all three releases simultaneously.

BACKGROUND

The November 8, 2019, *Closure Request* detailed site characterization according to Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the NMAC. Results from the site characterization are presented on page 3 of the Form C-141s, Site Assessment/Characterization. Potential site receptors are identified on Figure 1. Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) were applied:

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

Between February 2018 and July 2019, delineation and excavation activities were conducted at the Site to address impacted soil resulting from the three historical releases of crude oil and produced water. Closure was requested on November 8 2019, based on laboratory analytical results for the excavation and delineation soil samples indicating benzene, BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Additional details regarding the delineation and excavation activities can be referenced in the November 8, 2019, *Closure Request*.

On April 11, 2023, NMOCD denied the *Closure Request* for Incident Numbers nAB1514636338, nAB1726334149, and nAB1726332553 for the following reason:

- *The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater.*

ADDITIONAL DEPTH TO GROUNDWATER DETERMINATION

New depth to groundwater data became available since the submittal of the November 8, 2019, *Closure Request*. A borehole was drilled approximately 0.35 miles south of the Site during May 2021, for determination of regional groundwater depth. The borehole was advanced to a depth of 105 feet below ground surface (bgs) via hollow stem auger drill rig and was permitted as New Mexico Office of the State

XTO Energy, Inc.
Closure Request Addendum
Poker Lake Unit 184 Battery (Delaware C)

Engineer (NMOSE) well C-04526. The location of the borehole is presented on Figure 1. A field geologist logged and described soils continuously. The borehole lithologic/soil sampling log is included in Appendix A. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater was greater than 105 feet bgs. The borehole was properly abandoned using drill cuttings and hydrated bentonite chips. All wells used for depth to groundwater determination are depicted on Figure 1 and the referenced well records are included in Appendix A.

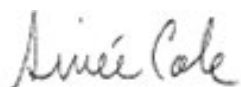
Based on confirmed depth to groundwater greater than 100 feet bgs within 0.5 miles of the Site, the Table I Closure Criteria identified in the original *Closure Request* are applicable and appropriate for protection of groundwater at this Site.

CLOSURE REQUEST

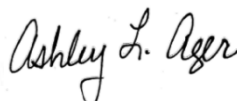
Site assessment and excavation activities were completed at the Site to address impacted soil resulting from three historical releases of crude oil and produced water. Based on depth to groundwater greater than 100 feet bgs within 0.5 miles of the Site as presented in this addendum and laboratory analytical results for the excavation and delineation soil samples compliant with the confirmed Site Closure Criteria, as presented in the November 8, 2019, *Closure Request*, included as Appendix B, XTO respectfully requests no further action for Incident Numbers nAB1514636338, nAB1726334149, and nAB1726332553.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely,
Ensolum, LLC



Aimee Cole
Senior Managing Scientist



Ashley Ager, P.G.
Program Director

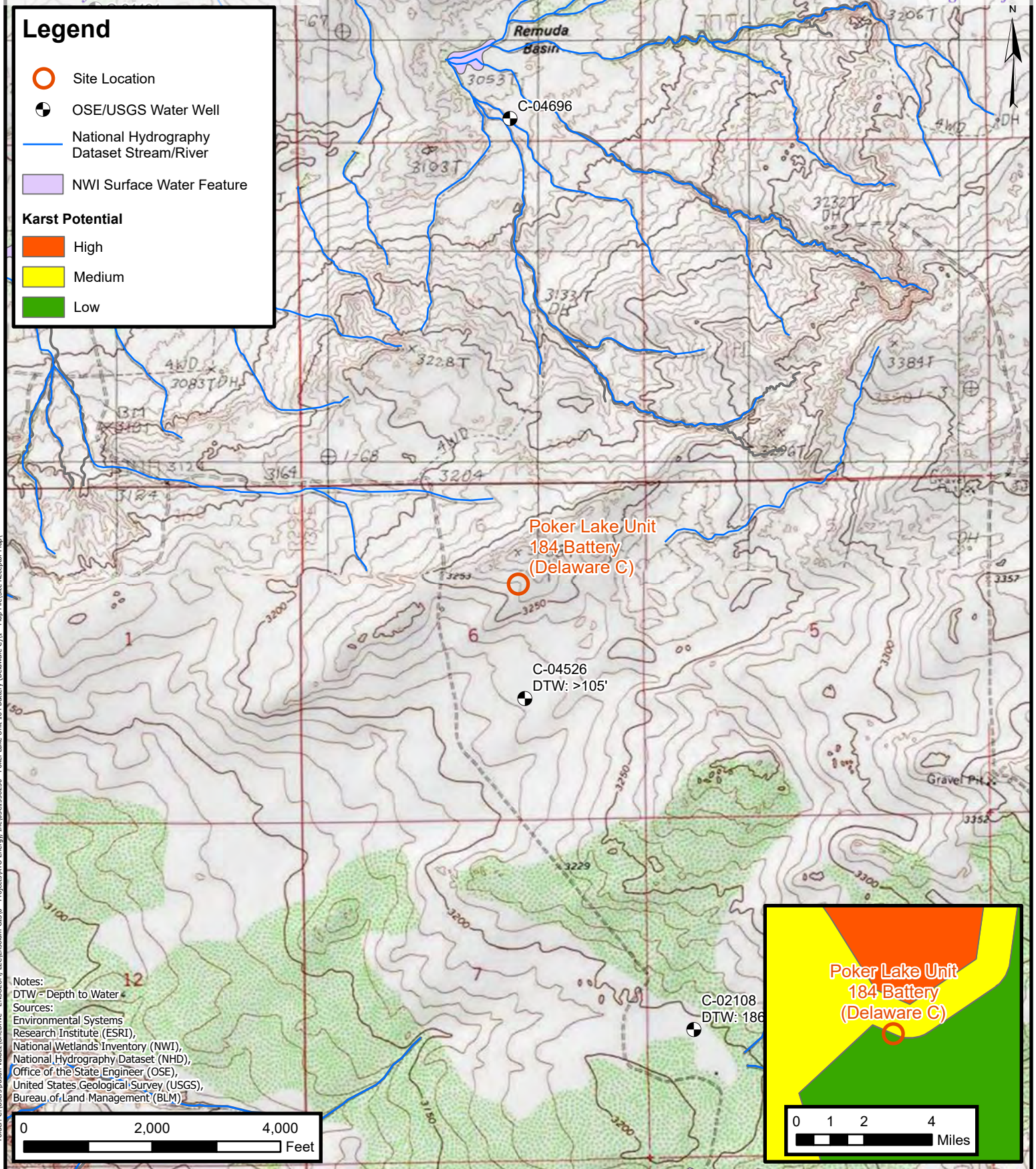
cc: Garrett Green, XTO
Shelby Pennington, XTO
Bureau of Land Management

Appendices:

Figure 1	Site Receptor Map
Appendix A	Referenced Well Records
Appendix B	November 8, 2019, Closure Request



FIGURES



Site Receptor Map

XTO Energy, Inc.

Poker Lake Unit 184 Battery (Delaware C)

Incident Number: nAB1726332553, nAB1726334149, and nAB1514636338

Unit G, Section 6, Township 24 South, Range 30 East

Eddy County, New Mexico

FIGURE

1



APPENDIX A

Referenced Well Records



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04526 POD1	4	1	4	06	24S	30E	601899	3568060 
Driller License:	1249	Driller Company:				ATKINS ENGINEERING ASSOC. INC.			
Driller Name:	ATKINS, JACKIE D.UELENER								
Drill Start Date:	05/14/2021	Drill Finish Date:				05/14/2021		Plug Date:	06/08/2021
Log File Date:	06/10/2021	PCW Rcv Date:				Source:			
Pump Type:		Pipe Discharge Size:				Estimated Yield:			
Casing Size:		Depth Well:				Depth Water:			

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

5/12/23 10:03 AM

POINT OF DIVERSION SUMMARY



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD1 (MW-1)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-4526			
	WELL OWNER NAME(S) XTO Energy (Kyle Littrell)				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 6401 Holiday Hill Dr.				CITY Midland	STATE TX	ZIP 79707	
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32°	MINUTES 14'	SECONDS 42.15" N	• ACCURACY REQUIRED: ONE TENTH OF A SECOND			
		LONGITUDE 103°	55'	6.20" W	• DATUM REQUIRED: WGS 84			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE NW NE Sec. 06 T24S R30E								
2. DRILLING & CASING INFORMATION	LICENSE NO. 1249		NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.		
	DRILLING STARTED 05/14/2021		DRILLING ENDED 05/14/2021		DEPTH OF COMPLETED WELL (FT) temporary well material	BORE HOLE DEPTH (FT) 105	DEPTH WATER FIRST ENCOUNTERED (FT) n/a	
	COMPLETED WELL IS: ☐ ARTESIAN ☒ DRY HOLE ☐ SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) n/a		
	DRILLING FLUID: ☒ AIR ☐ MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☒ OTHER - SPECIFY: Hollow Stem Auger							
	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	105	±6.5	Boring- HSA	--	--	--	--
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO.	C-4526	POD NO.	1	TRN NO.	692109
LOCATION	Expl 24S.30E.6.414	WELL TAG ID NO.	06-10-018-102001-62001	PAGE 1 OF 2	

	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)	
	FROM	TO					
4. HYDROGEOLOGIC LOG OF WELL	0	4	4	SAND, poorly graded, fine-very grained, Reddish-brown, dry	Y ✓ N		
	4	12	8	CALICHE, poorly-mod. consolidated, tan-off white, dry	Y ✓ N		
	12	19	7	SAND, poorly graded, fine-very grained, some caliche gravel, Tan ,dry	Y ✓ N		
	19	24	5	SAND, poorly graded, fine-very grained, some caliche gravel, Light- Brown, dry	Y ✓ N		
	24	72	48	SAND, poorly graded, fine-very grained, Reddish Brown, moist	Y ✓ N		
	72	92	20	SAND, poorly graded, fine-very grained, some silt, Reddish Brown, moist	Y ✓ N		
	92	102	10	SILTY SAND, poorly graded, fine-very grained, Reddish Brown, moist	Y ✓ N		
	102	105	3	SILTY SAND, poorly graded, fine-very grained, Reddish Brown, dry	Y ✓ N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
	METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:					TOTAL ESTIMATED WELL YIELD (gpm): 0.00	
	5. TEST, RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.				
MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface. Logs adapted from WSP on-site geologist.							
PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: Shane Eldridge, Carmelo Trevino, Cameron Pruitt							
6. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING: Jack Atkins Jackie D. Atkins					06/09/2021	
SIGNATURE OF DRILLER / PRINT SIGNEE NAME					DATE		

FOR OSE INTERNAL USE		WR-20 WELL RECORD & LOG (Version 06/30/2017)	
FILE NO.	C-4526	POD NO.	1
LOCATION		TRN NO.	492109
		WELL TAG ID NO	PAGE 2 OF 2

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PLUGGING RECORD



NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: C-4526-POD1

Well owner: XTO ENERGY (Kyle Littrell)

Phone No.: 432.682.8873

Mailing address: 6401 Holiday Hill Dr.

City: Midland

State: Texas

Zip code: 79707

II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Jackie D. Atkins (Atkins Engineering Associates Inc.)
- 2) New Mexico Well Driller License No.: 1249 Expiration Date: 04/30/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Shane Eldridge, Carmelo Trevino, Cameron Pruitt
- 4) Date well plugging began: 06/08/2021 Date well plugging concluded: 06/08/2021
- 5) GPS Well Location: Latitude: 32 deg, 14 min, 42.15 sec
Longitude: 103 deg, 55 min, 6.20 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 105 ft below ground level (bgl),
by the following manner: weighted tape
- 7) Static water level measured at initiation of plugging: n/a ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 04/12/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

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- 10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

<u>Depth</u> (ft bgl)	<u>Plugging Material Used</u> (include any additives used)	<u>Volume of Material Placed</u> (gallons)	<u>Theoretical Volume of Borehole/ Casing</u> (gallons)	<u>Placement Method</u> (tremie pipe, other)	<u>Comments</u> ("casing perforated first", "open annular space also plugged", etc.)
0-10'	Hydrated Bentonite	Approx. 15.6 gallons	15.9 gallons	Augers	
10'-105'	Drill Cuttings	Approx. 151 gallons	151 gallons	Boring	

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MULTIPLY	BY	AND OBTAIN
cubic feet x	7.4805	= gallons
cubic yards x	201.97	= gallons

III. SIGNATURE:

I, Jackie D. Atkins, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Jack Atkins

Signature of Well Driller

06/09/2021

Date



APPENDIX B

November 8, 2019, Closure Request



LT Environmental, Inc.

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

November 8, 2019

Mr. Bradford Billings
New Mexico Oil Conservation Division
1220 South St. Francis Drive, #3
Santa Fe, New Mexico 87505**RE: Closure Request
Poker Lake Unit 184 Battery (Delaware C)
Remediation Permit Numbers 2RP-3014, 2RP-4396, and 2RP-4397
Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request report detailing site assessment, soil sampling, and excavation activities at the Poker Lake Unit 184 Battery (Delaware C) (Site) in Unit G, Section 6, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, soil sampling, and excavation activities was to address impacts to soil following three separate events that caused the release of produced water and crude oil at the Site. Based on the excavation activities and results of the soil sampling events, XTO is submitting this Closure Request, describing remediation that has occurred and requesting no further action for the release events.

The releases are included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the New Mexico Oil Conservation Division (NMOCD) effective November 13, 2018. The purpose of the Compliance Agreement is to ensure reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The releases are categorized as Tier IV sites in the Compliance Agreement, meaning the releases occurred prior to August 14, 2018, the effective date of 19.15.29 NMAC; however, remediation was ongoing.

RELEASE BACKGROUND

On May 18, 2015, corrosion of a flow line caused the release of approximately 7 barrels (bbls) of oil and 38 bbls of produced water. The well was shut down until a joint of pipe could be replaced. The release impacted approximately 3,610 square feet of caliche pad and approximately 250 square feet of pasture. Approximately 5 bbls of oil and 5 bbls of produced water were recovered. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on May 22, 2015, and was assigned Remediation Permit (RP) Number 2RP-3014 (Attachment 1).





Billings, B.
Page 2

On August 16, 2017, salt accumulated in the dump valves of two free water knock-out vessels, causing fluid to be forced out through the pop-off valves. Approximately 11 barrels (bbls) of produced water were released. The release affected approximately 2,500 square feet of caliche pad and 100 square feet of pasture. XTO reported the release to the NMOCD on a Form C-141 on September 18, 2017, and was assigned Remediation Permit (RP) Number 2RP-4397 (Attachment 1).

On August 18, 2017, salt accumulated in the dump valves of process vessels, causing fluids to be forced out of the facility flare. Approximately 35.96 bbls of produced water and 2.3 bbls of crude oil were released. The release affected approximately 450 square feet of caliche pad and 7,000 square feet of pasture. Approximately 18.8 bbls of produced water and 1.2 bbls of crude oil were recovered. XTO reported the release to the NMOCD on a Form C-141 on September 18, 2017, and was assigned RP Number 2RP-4396 (Attachment 1).

Although the first release occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Since the three releases occurred in the same general area of well pad, excavation and sampling activities were completed to address and close all three releases simultaneously.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the NMAC. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is NM OSE well C 02108, located approximately 7,405 feet southeast of the Site. The water well has a depth to groundwater of 186 feet bgs and a total depth of 200 feet bgs. Ground surface elevation at the water well location is approximately 3,199 feet above mean sea level (AMSL), which is approximately 62 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 1,662 feet west-northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low-potential karst area.

CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;





Billings, B.
Page 3

- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- Total petroleum hydrocarbons (TPH): 2,500 mg/kg; and
- Chloride: 20,000 mg/kg.

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

The three releases occurred in the same general area of well pad; therefore, site assessment and soil sampling activities were completed to address and close all three releases simultaneously. However, due to duplicative sample nomenclature the below site assessment and soil sampling summaries and associated figures and tables are separated for RP Number 2RP-3014.

RP Number 2RP-3014

On February 6, 2018, LTE personnel inspected the Site to evaluate the release area associated with RP Number 2RP-3014. Five preliminary soil samples (SS1 through SS5) were collected within and around the release area to assess the lateral extent of impacted soil. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141 and field observations.

On July 10 and July 11, 2019, LTE personnel returned to the Site to oversee site assessment activities. Potholes were advanced via track hoe at 10 locations within and around the release area to assess for potential soil impacts associated with the historical release. Potholes PH01 through PH10 were advanced to depths ranging from 4 feet to 6 feet bgs. Two delineation soil samples were collected from each pothole at depths ranging from 2 feet to 6 feet bgs. Soil from the potholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each pothole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The pothole delineation soil sample locations are depicted on Figure 3.

The preliminary and delineation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. Photographic documentation was conducted during the Site visits. Photographs are included in Attachment 3.





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RP Numbers 2RP-4396 and 2RP-4397

On February 6, 2018, LTE personnel inspected the Site to evaluate the release areas associated with RP Numbers 2RP-4396 and 2RP-4397. Seven preliminary soil samples (SS1 through SS7) were collected within and around the release areas on the well pad and pasture, to assess the lateral extent of impacted soil. The soil sample locations, depicted on Figure 4, were selected based on information provided on the initial Form C-141 and field observations.

On August 14, 2018, LTE personnel returned to the Site to oversee excavation of soil as indicated by visual observations, field screening activities, and laboratory analytical results for the preliminary soil samples. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively.

Excavation of the impacted soil was conducted prior to the Compliance Agreement and prior to the implementation of the August 14, 2018, NMOCD modification to 19.15.29. Following removal of impacted soil, excavation confirmation samples were collected on August 17, 2018, as discrete samples instead of composite samples. The area of impacted soil could be visually discerned; therefore, LTE applied a judgmental sampling protocol, selecting sample locations based on visual observation to represent the floor and sidewalls of the excavation. The sampling protocol complied with Guidance on Choosing a Sampling Design for Environmental Data Collection for Use in Developing a Quality Assurance Project Plan, EPA QA/G-5S, December 2002. Soil samples SW01 through SW04 were collected from the sidewalls of the excavation at a depth of 2 feet bgs. Soil sample FS01 was collected from the floor of the excavation at a depth of 4 feet bgs. The excavation extent and excavation soil sample locations are depicted on Figure 5.

Between July 11 and July 16, 2019, LTE personnel was at the Site to oversee site assessment activities. Potholes and boreholes were advanced via track hoe or hand-auger at 14 locations within and around the release areas to assess for potential soil impacts associated with the historical releases. Potholes PH01 through PH10 were advanced to depths ranging from 4 feet to 22 feet bgs. Boreholes BH01 through BH04 were advanced to a depth of 4 feet bgs. Delineation soil samples were collected from each pothole and borehole at depths ranging from 2 feet to 22 feet bgs. Soil from the potholes and boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each pothole and borehole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The pothole and borehole delineation soil sample locations are depicted on Figure 6.

The preliminary, excavation, and delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 3.



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The excavation extent measured approximately 1,200 square feet in area. A total of approximately 175 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the Lea Land landfill facility located in Hobbs, New Mexico.

ANALYTICAL RESULTS

RP Number 2RP-3014

Laboratory analytical results for preliminary soil samples SS1 through SS5 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Delineation soil sampling was conducted to confirm the presence or absence of impacted soil in the release area. Laboratory analytical results for the delineation soil samples collected from potholes PH01 through PH10 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Based on the laboratory analytical results, no excavation was required in the historical release area associated with RP Number 2RP-3014. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

RP Numbers 2RP-4396 and 2RP-4397

Laboratory analytical results for preliminary soil samples SS1 through SS5, and SS7 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results for preliminary soil sample SS6 indicated that GRO/DRO and TPH concentrations exceeded the Closure Criteria. Impacted soil was excavated from the area around preliminary soil sample SS6. Laboratory analytical results for excavation soil samples SW01 through SW04, and FS01 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Delineation soil sampling was conducted to confirm the presence or absence of additional impacted soil in the release areas. Laboratory analytical results for the delineation soil samples collected from potholes PH01 through PH10 and boreholes BH01 through BH04 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Based on the laboratory analytical results, no further excavation was required in the historical release areas associated with RP Numbers 2RP-4396 and 2RP-4397. Laboratory analytical results are summarized in Table 2 and the complete laboratory analytical reports are included as Attachment 4.

CLOSURE REQUEST

Impacted soil was excavated from the Site to address impacts to soil resulting from historical releases of crude oil and produced water at the Site. Laboratory analytical results for the excavation soil samples collected from the final excavation extent indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Delineation soil





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Page 6

sampling was completed in and around the release areas on the well pad and pasture to confirm the presence or absence of additional impacted soil. Laboratory analytical results for the delineation soil samples collected from 20 potholes and 4 boreholes indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Based on the excavation and delineation soil sample analytical results, no further remediation was required.

Initial response efforts, natural attenuation, and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Numbers 2RP-3014, 2RP-4396, and 2RP-4397. XTO backfilled the excavation with material purchased locally and recontoured the Site to match pre-existing site conditions. An updated NMOCD Form C-141 for each release is included in Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads 'Aimee Cole'.

Aimee Cole
Project Environmental Scientist

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

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Mike Bratcher, NMOCD
Bureau of Land Management

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations (2RP-3014)
Figure 3	Delineation Soil Sample Locations (2RP-3014)
Figure 4	Preliminary Soil Sample Locations (2RP-4396 and 2RP-4397)
Figure 5	Excavation Soil Sample Locations (2RP-4396 and 2RP-4397)
Figure 6	Delineation Soil Sample Locations (2RP-4396 and 2RP-4397)
Table 1	Soil Analytical Results





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Attachment 1 Initial/Final NMOC Form C-141 (2RP-3014, 2RP-4396, and 2RP-4397)

Attachment 2 Lithologic / Soil Sample Logs

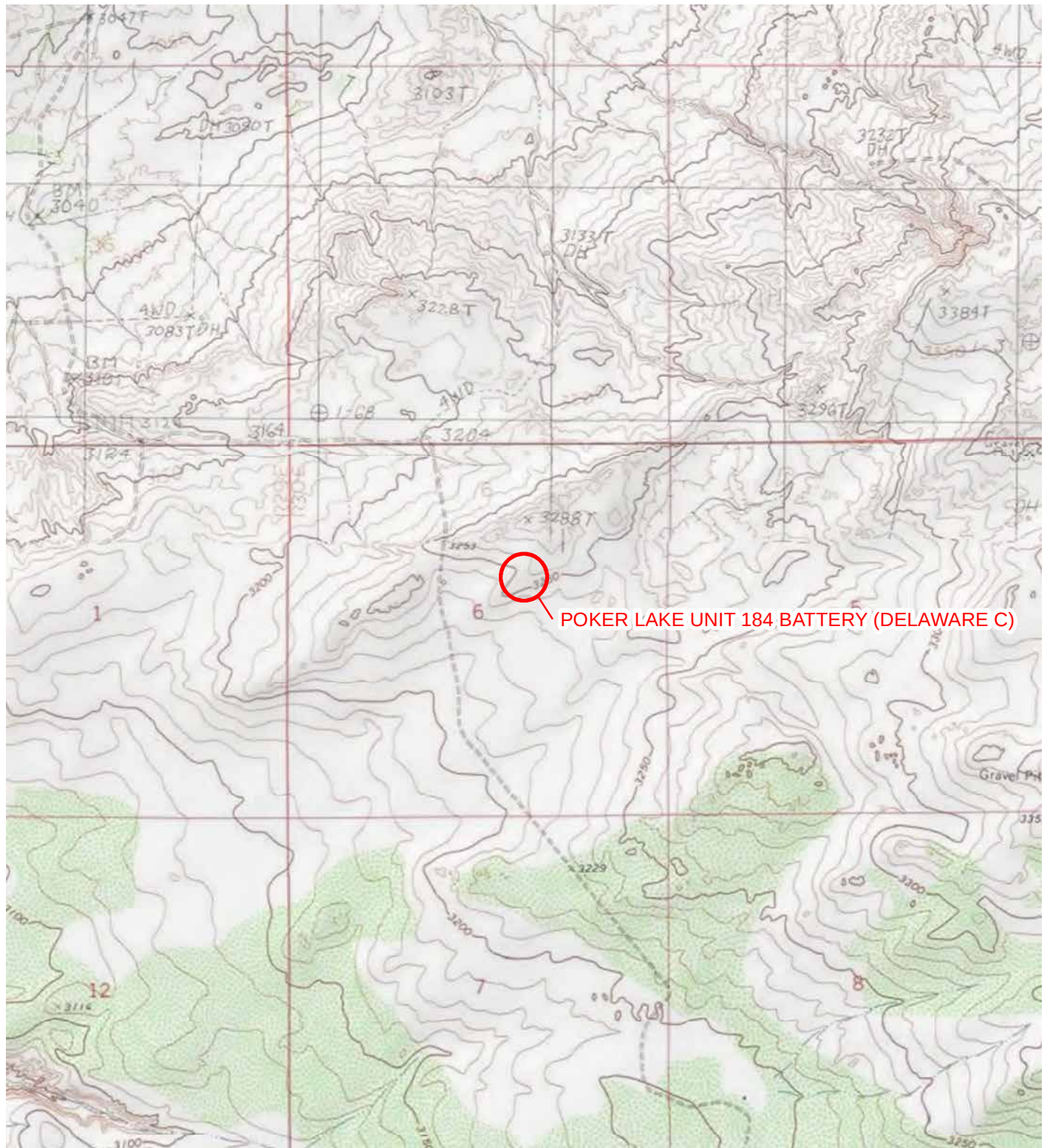
Attachment 3 Photographic Log

Attachment 4 Laboratory Analytical Reports



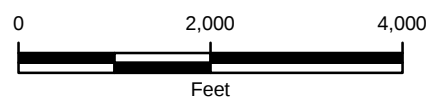
FIGURES



**LEGEND**

 SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

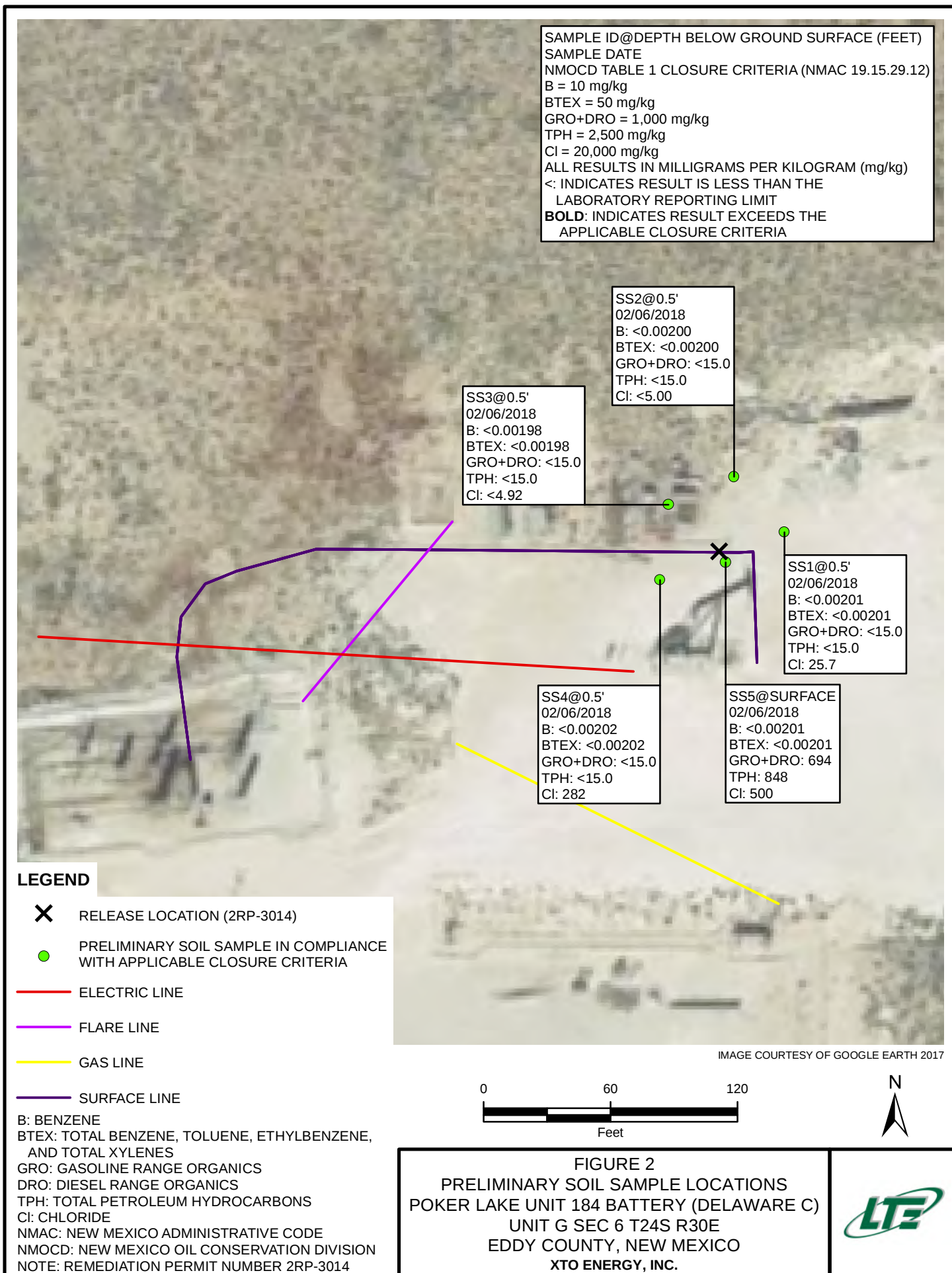


NOTE: REMEDIATION PERMIT
NUMBERS 2RP-4396 & 2RP-4397

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT 184 BATTERY (DELAWARE C)
UNIT G SEC 6 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



P:\XTO Energy\GIS\MXD\012918039_PLU 184 BATTERY_4396_4397\012918039_FIG01_SL_2018_4396_4397.mxd



P:\XTO Energy\GIS\MD\012918039_PLU 184 BATTERY_4396_4397\012918039_FIG02_PRELIMINARY_3014.mxd



IMAGE COURTESY OF GOOGLE EARTH 2017

LEGEND

RELEASE LOCATION (2RP-3014)

DELINEATION SOIL SAMPLE IN COMPLIANCE
WITH APPLICABLE CLOSURE CRITERIA

— ELECTRIC LINE

— FLARE LINE

— GAS LINE

— SURFACE LINE

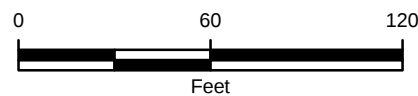
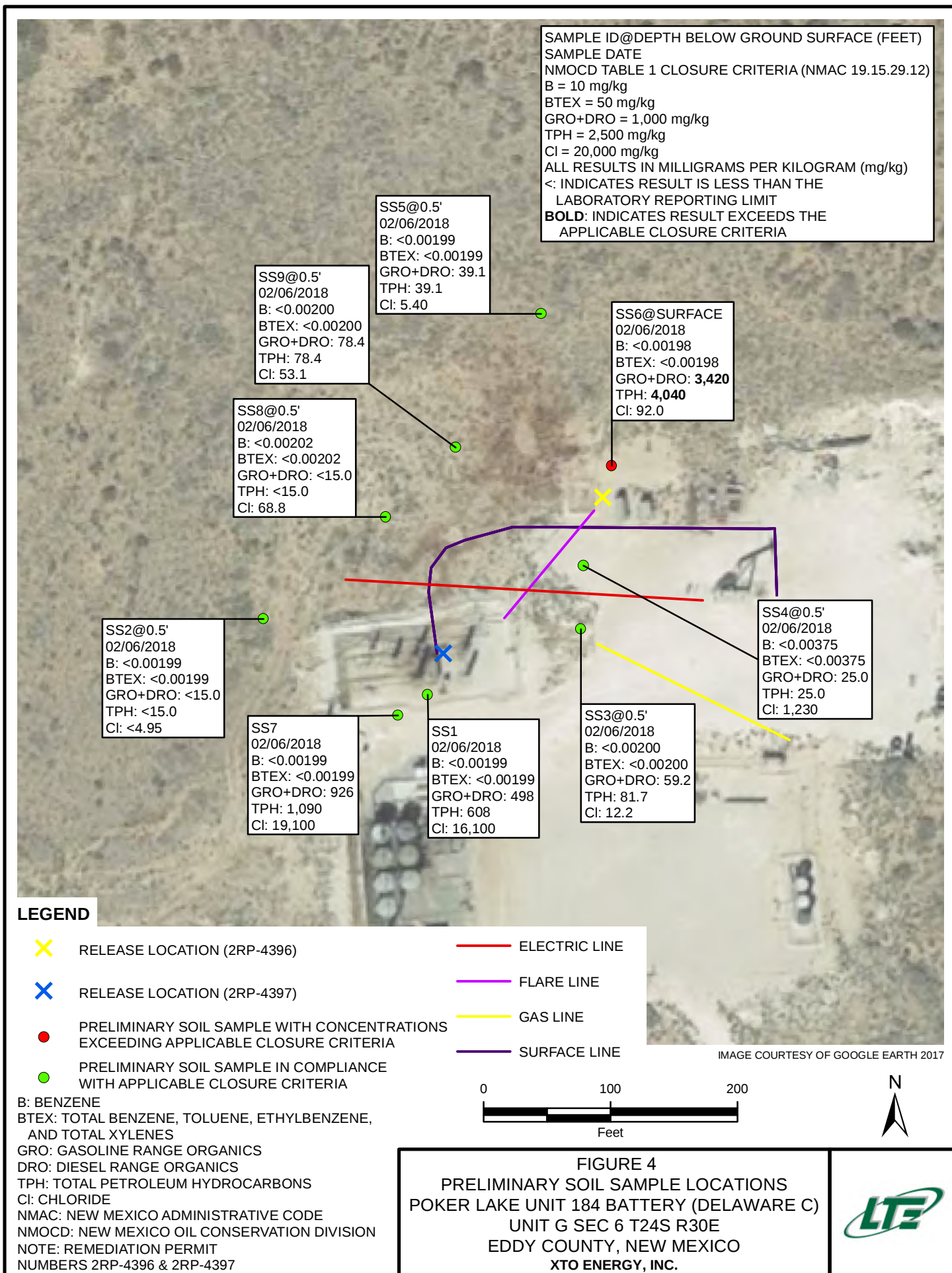
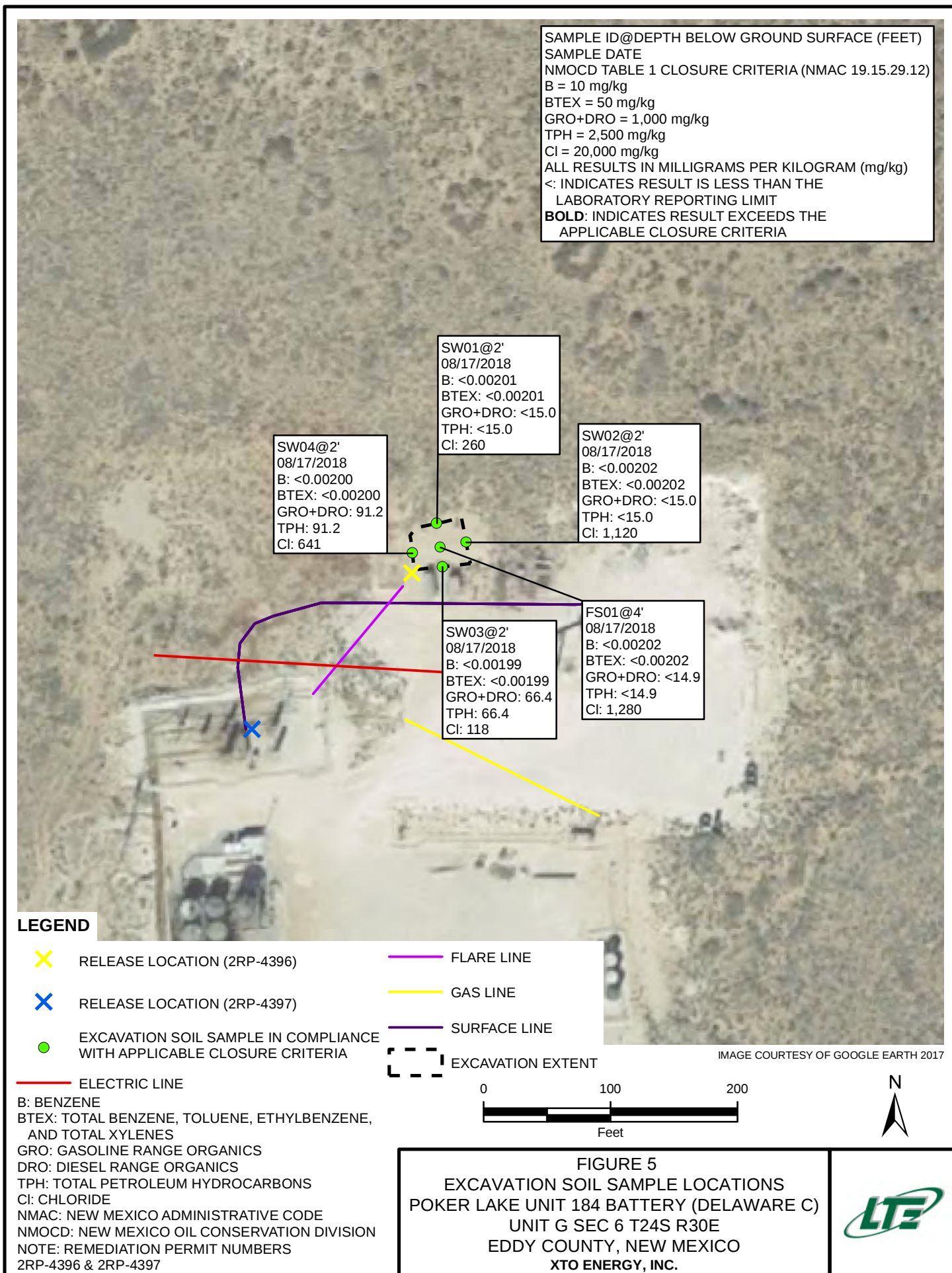
SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-3014

FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 184 BATTERY (DELAWARE C)
UNIT G SEC 6 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



P:\XTO Energy\GIS\MXD\012918039_PLU 184 BATTERY_4396_4397\012918039_FIG03_DELINEATION_3014.mxd





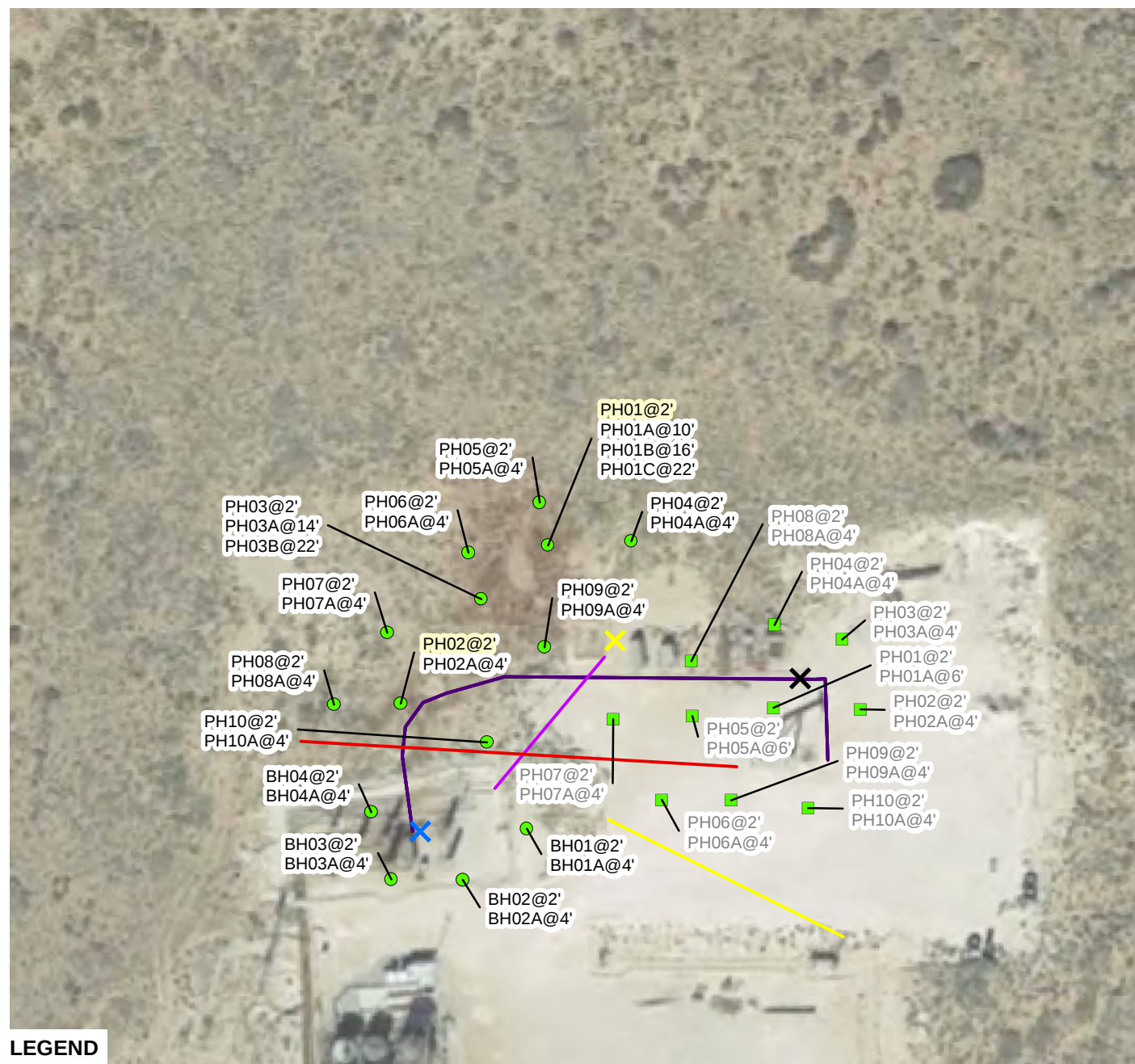


FIGURE 6
DELINEATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 184 BATTERY (DELAWARE C)
UNIT G SEC 6 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



P:\XTO Energy\GIS\MXD\012918039_PLU 184 BATTERY_4396_4397\2RP-4397\012918039_FIG03_DELINEATION_4397.mxd

TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT 184 BATTERY (DELAWARE C)
REMEDIATION PERMIT NUMBER 2RP-3014
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS1	0.5	02/06/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	25.7
SS2	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
SS3	0.5	02/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<4.92
SS4	0.5	02/06/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	282
SS5	Surface	02/06/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	694	154	694	848	500
PH01	2	07/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,650
PH01A	6	07/10/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	19.0
PH02	2	07/10/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	26.1
PH02A	4	07/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	64.3
PH03	2	07/10/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	51.1
PH03A	4	07/10/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	62.8
PH04	2	07/10/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	24.0
PH04A	4	07/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	289
PH05	2	07/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	783
PH05A	6	07/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	92.3
PH06	2	07/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	38.0
PH06A	4	07/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	29.3
PH07	2	07/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	404	50.3	404	454	11.6
PH07A	4	07/10/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	20.5
PH08	2	07/11/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	<5.05
PH08A	4	07/11/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	435
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

**TABLE 1
SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT 184 BATTERY (DELAWARE C)
REMEDATION PERMIT NUMBER 2RP-3014
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
PH09	2	07/11/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	186
PH09A	4	07/11/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	161
PH10	2	07/11/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	39.8
PH10A	4	07/11/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	54.9
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

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

**TABLE 2
SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT 184 BATTERY (DELAWARE C)
REMEDATION PERMIT NUMBER 2RP-4396, 2RP-4397
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS1	Surface	02/06/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	498	110	498	608	16,100
SS2	0.5	02/06/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
SS3	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	59.2	22.5	59.2	81.7	12.2
SS4	0.5	02/06/2018	<0.00375	<0.00375	<0.00375	<0.00375	<0.00375	<15.0	25.0	<15.0	25.0	25.0	1,230
SS5	0.5	02/06/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	39.1	<15.0	39.1	39.1	5.40
SS6	Surface	02/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<74.9	3,240	796	3,240	4,040	92.0
SS7	Surface	02/06/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	926	168	926	1,090	19,100
SS8	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	68.8
SS9	0.5	02/06/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	78.4	<15.0	78.4	78.4	53.1
FS01	4	08/17/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	1,280
SW01	2	08/17/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	260
SW02	2	08/17/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	1,120
SW03	2	08/17/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	66.4	<14.9	66.4	66.4	118
SW04	2	08/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	91.2	<15.0	91.2	91.2	641
PH01	2	07/11/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	139	47.0	139	186	5,160
PH01A	10	07/11/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,140
PH01B	16	07/11/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	1,240
PH01C	22	07/11/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	80.3
PH02	2	07/11/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	202	38.9	202	241	57.0
PH02A	4	07/11/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	80.2	21.6	80.2	102	36.6
PH03	2	07/11/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	484
PH03A	14	07/12/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	615
PH03B	22	07/12/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	737
PH04	2	07/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	45.9	<15.0	45.9	45.9	437
PH04A	4	07/12/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	179
PH05	2	07/12/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	51.3
PH05A	4	07/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	67.0

TABLE 2
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT 184 BATTERY (DELAWARE C)
REMEDIATION PERMIT NUMBER 2RP-4396, 2RP-4397
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
PH06	2	07/12/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	180
PH06A	4	07/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	182
PH07	2	07/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	8.86
PH07A	4	07/12/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	6.18
PH08	2	07/12/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.01
PH08A	4	07/12/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	39.8
PH09	2	07/12/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	35.2	<15.0	35.2	35.2	73.7
PH09A	4	07/12/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	36.4	<15.0	36.4	36.4	377
PH10	2	07/12/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	28.8	<15.0	28.8	28.8	13.5
PH10A	4	07/12/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	119	20.4	119	139	37.6
BH01	2	07/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	15.4
BH01A	4	07/16/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	98.5
BH02	2	07/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	38.4
BH02A	4	07/16/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	37.4
BH03	2	07/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	155
BH03A	4	07/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	132
BH04	2	07/16/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	15.8
BH04A	4	07/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	53.8
NMOC D Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

MRO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOC D - 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 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-3014, 2RP-4396, and 2RP-4397)

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
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB1514636338

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 260737	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-184	Facility Type: Exploration and Production
Surface Owner: Federal	Mineral Owner: Federal
API No. 30-015-31990	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County:
G	6	24S	30E	1700	North	1850	East	Eddy

Latitude N 32.249464° Longitude W 103.918239°

NATURE OF RELEASE

Type of Release: Crude oil & produced water	Volume of Release: 7 bbls. oil and 38 bbls. PW	Volume Recovered: 5 bbls oil and 5 bbls PW
Source of Release: 2 7/8" flow line	Date and Hour of Occurrence: 5/18/15 time unknown	Date and Hour of Discovery: 5/18/15 at approximately 11 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD, Artesia office and BLM	
By Whom? Brad Blevins	Date and Hour: 5/18/15 at 1:25 p.m.	
Was a Watercourse Reached? ☐ Yes ☐ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

NM OIL CONSERVATION

ARTESIA DISTRICT

MAY 22 2015

Describe Cause of Problem and Remedial Action Taken.*

The flow developed a leak due to corrosion. The well was shut down until a joint of pipe could be replaced.

RECEIVED

Describe Area Affected and Cleanup Action Taken.*

The spill impacted approximately 3610 sq.ft. of caliche pad and 250 sq.ft. of pasture. The spill impacted areas that had previous spills associated with the Del C SWD Tank Battery. Spills listed under API 30-015-31412 and API-30-015-31990. The spill area will be cleaned up in accordance to the NMOCD and BLM remediation guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: <u>Tony Savoie</u>	OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie	Approved by Environmental Specialist: <u>H. Huber</u>	
Title: Waste Management and Remediation Specialist	Approval Date: <u>5/26/15</u>	Expiration Date: <u>N/A</u>
E-mail Address: <u>tasavoie@basspet.com</u>	Conditions of Approval:	
Date: <u>5/22/15</u> Phone: 432-556-8730	Remediation per O.C.D. Rules & Guidelines SUBMIT REMEDIATION PROPOSAL NO LATER THAN: <u>5/28/15</u>	

* Attach Additional Sheets If Necessary

2RP-3014

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	
District RP	2RP-3014
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-3014
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude N 32.249464 Longitude W 103.918239
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: PLU 184	Site Type: Production Well Facility
Date Release Discovered: 5/18/2015	API# (if applicable): 30-015-31990

Unit Letter	Section	Township	Range	County
G	6	24S	30E	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): 7	Volume Recovered (bbls): 5
☒ Produced Water	Volume Released (bbls): 38	Volume Recovered (bbls): 5
	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
The flow line developed a leak due to corrosion at a joint.

Incident ID	
District RP	2RP-3014
Facility ID	
Application ID	

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? Greater than 25 barrels were released
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Immediate notice was given to NMOCD and BLM by Brad Blevins on 5/18/2015 at 1:25 pm.	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Supervisor</u>
Signature: 	Date: <u>11/8/2019</u>
email: <u>Kyle.Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
District RP	2RP-3014
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-3014
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 11/8/2019

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-3014
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 10/28/2019

email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

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
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NM OIL CONSERVATION

ARTESIA DISTRICT

SEP 18 2017

Form C-141
Revised August 8, 2011Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

RECEIVED

Release Notification and Corrective Action

NAB1726332553 **Bopec** **AL0737** **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: XTO Energy	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Poker Lake Unit 184 Battery (Delaware C) (API for PLU #184)	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-31990
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	6	24S	30E	1610	North	2000	East	Eddy

Past due - Initial
C-141

Latitude 32.249498° Longitude -103.918614°

NATURE OF RELEASE

Type of Release	Produced Water and Crude Oil	Volume of Release	35.96 BPW 2.30 BO	Volume Recovered	18.8 BPW 1.20 BO
Source of Release	Flare	Date and Hour of Occurrence	8/18/2017 time unknown	Date and Hour of Discovery	8/18/2017 8 am
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Mike Bratcher/Crystal Weaver (NMOCD), Jim Amos/Shelly Tucker (BLM)		
By Whom?	Amy Ruth	Date and Hour	8/18/2017 12:03 pm by email		
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	N/A		

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

Salt accumulated within the dump valves of process vessels and fluids were forced out of the facility flare. The battery and associated wells were shut in until the cause of the salt plugs can be identified and resolved.

Describe Area Affected and Cleanup Action Taken.*

The leak affected approximately 450 square feet of caliche pad and about 7,000 square feet of pasture to the north and west of the process area earthen berm. Facility equipment was power washed and free standing fluids were recovered from the pasture and earthen flare containment.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Amy C. Ruth	Approved by Environmental Specialist	Crystal Weaver
Title: Environmental Coordinator	Approval Date: 9/19/17	Expiration Date: N/A
E-mail Address: Amy_Ruth@xtoenergy.com	Conditions of Approval: See attached	Attached ☒ ARP 4376
Date: 9/18/2017 Phone: 432-661-0571		

* Attach Additional Sheets If Necessary

Please refer to the New Mexico Oil
Conservation Division Website for
updated form(s) at:
[http://www.emnrd.state.nm.us/
OCD/forms.html](http://www.emnrd.state.nm.us/OCD/forms.html) Thank you

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State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	2RP-4396
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-4396
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude N 32.249498 Longitude W 103.918614
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Poker Lake Unit 184 Battery (Delaware C)	Site Type: Production Well Facility
Date Release Discovered: 8/18/2017	API# (if applicable): 30-015-31990

Unit Letter	Section	Township	Range	County
G	6	24S	30E	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): 2.30	Volume Recovered (bbls): 1.20
☒ Produced Water	Volume Released (bbls):35.96	Volume Recovered (bbls): 18.8
	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
Salt accumulated within the dump valves of process vessels and fluids were forced out of the flare.

Incident ID	
District RP	2RP-4396
Facility ID	
Application ID	

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? Release volume greater than 25 bbls.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Immediate notice was given to Mike Bratcher/Crystal Weaver (NMOCD) and Jim Amos/Shelly Tucker (BLM) on 8/18/2017 at 12:03 pm via email.	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Supervisor</u>
Signature: 	Date: <u>11/8/2019</u>
email: <u>Kyle.Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
District RP	2RP-4396
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-4396
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 11/8/2019

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-4396
Facility ID	
Application ID	

Closure

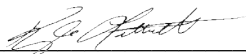
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 11/8/2019

email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

NM OIL CONSERVATION

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88220
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

SEP 18 2017

RECEIVED

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141
Revised August 8, 2011

SEP 18 2017

Submit Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

RECEIVED

Release Notification and Corrective Action

NAB1726334149

OPERATOR
☒ Initial Report ☐ Final Report

Name of Company: XTO Energy	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Poker Lake Unit 184 Battery (Delaware C) (API for PLU #184)	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-31990
------------------------	------------------------	----------------------

LOCATION OF RELEASE

Unit Letter G	Section 6	Township 24S	Range 30E	Feet from the 1740	North/South Line North	Feet from the 2125	East/West Line East	County Eddy
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Latitude 32.249172° Longitude -103.919028°

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 11.09 BPW	Volume Recovered 0 BPW
Source of Release FWKO pop-off valves	Date and Hour of Occurrence 8/16/2017 7 am	Date and Hour of Discovery 8/16/2017 7 am
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

Salt accumulated within the dump valves of two free water knock out vessels and fluid was forced through the pop-off valves. The vessels were isolated and repaired.

Describe Area Affected and Cleanup Action Taken.*

The leak affected approximately 2500 square feet of caliche pad and about 100 square feet of pasture to the west of the battery earthen berm. Facility equipment was power washed.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC 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 NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC 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.

OIL CONSERVATION DIVISION

Signature:	Approved by Environmental Specialist:	
Printed Name: Amy C. Ruth	Approval Date: 9/18/17	Expiration Date: N/A
Title: Environmental Coordinator	Conditions of Approval: see attached	
E-mail Address: Amy_Ruth@xtoenergy.com	Attached:	
Date: 9/18/2017 Phone: 432-661-0571		

* Attach Additional Sheets If Necessary

Please refer to the New Mexico Oil
Conservation Division Website for
updated form(s) at:
[http://www.emnrd.state.nm.us/
OCD/forms.html](http://www.emnrd.state.nm.us/OCD/forms.html) Thank you

District I
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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	
District RP	2RP-4397
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-4397
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude N 32.249172 Longitude W 103.919028
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Poker Lake Unit 184 Battery (Delaware C)	Site Type: Production Well Facility
Date Release Discovered: 8/16/2017	API# (if applicable): 30-015-31990

Unit Letter	Section	Township	Range	County
G	6	24S	30E	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):	Volume Recovered (bbls):
☒ Produced Water	Volume Released (bbls): 11.09	Volume Recovered (bbls): 0
	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

Salt accumulated within the dump valves of two free water knock out vessels and fluid was forced through the pop-off valves. The vessels were isolated and repaired.

Incident ID	
District RP	2RP-4397
Facility ID	
Application ID	

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

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Supervisor</u>
Signature: 	Date: <u>11/8/2019</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
District RP	2RP-4397
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-4397
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 11/8/2019

email: Kyle Littrell@xtoenergy.com Telephone: (432)-221-7331

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-4397
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 11/8/2019

email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

ATTACHMENT 2: LITHOLOGIC / SOIL SAMPLE LOGS

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH01		Date: 7/10/19		
				Project Name: PLU 184		RP Number: ZRP-3014		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: BB		Method: trackhoe		
Lat/Long:		Field Screening: CHLORIDES, PID		Hole Diameter: N/A		Total Depth: 6'		
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLAYE	CALICHE, dry, tan, poorly ^{well} consolidated, f.-m. xla, no odor
					1			
D	1,772	0.8	N	PH01	2	2'	CLAYE	SAT (same As Above) (10:30)
					3			
D	640	0.3	N		4	4'	CLAYE	SAT (10:35)
					5			
D	<124	0.8	N	PH01A	6	6'	CLAYE	SAT (10:45)
					7			↑ EOP@6'
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: P102 Project Name: PLU 184	Date: 7/10/19 RP Number: ZRP-3014					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB Hole Diameter: N/A	Method: Track Hole Total Depth: 4'					
Lat/Long:		Field Screening: CHLORIDES, PID.						
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLCHE, fill.	CALICHE, fill, dry, poorly consolidated, f.-m. xln, no odor, fill
					1		(SP)	SAND, moist, brown-red, poorly graded, f.-m., no odor.
M	<124	0.3	N	P102	2	2'	(SP)	(11:00)
					3		CLCHE	CALICHE, dry, tan - off wht, well consolidated, m.-f. xln, no odor
D	<124	0.3	N	P102A	4	4'	CLCHE	SAB (Same As Above) (11:10)
					5			↑ FOP @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH03

Date:

7/10/19

Project Name:

PLU 184

RP Number:

ZRP-3014

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: BB

Method: + Pick hoe

Lat/Long:

Field Screening: CHLORIDES, PID,

Hole Diameter:

NA

Total Depth:

4'

Comment All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLCH	CLCH, dry, tan, well consolidated, f.-m. xln, no odor.
					1			
D	<124	0.1	N	PH03	2	2'	CLCH	SAT (same As Above) (11:20)
					3			
D	<124	0.1	N	PH03A	4	4'	CLCH	SAT (11:25)
					5			↑ FOP @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH04

Date:

7/10/19

Project Name:

PLU 184

RP Number:

ZRP-3014

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: BB

Method: Track hoe

Lat/Long:

Field Screening: CHLORIDES, PID.

Hole Diameter:

N/A

Total Depth:

4'

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP)	SAND, dry, brown, poorly sorted, f., some vegetation/roots, no odor, some calcareous gravel.
					1			
D	124	0.1	N	PH04	2	2'	(SP) SAND	S&A (Same As Above) (11:40)
					3			SAND, moist, brown-red, poorly sorted, f., no odor.
m	435	0.1	N	PH04	4	4'	(SP)	(11:50)
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

↑
EOP @ 4'

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH05		Date: 7/10/19		
				Project Name: PLU 184		RP Number: ZRP-3014		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: BB		Method: Track hoe		
Lat/Long:		Field Screening: CHLORIDES, PID.		Hole Diameter: N/A		Total Depth: 6'		
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLICHE, FILL.	CALICHE, dry, tan, poorly consolidated, m.-f. xln, no odor, f.u.
					1			
M	1043	0.3	N	PH05	2	2'	(SA)	SAND, moist, brown-red, poorly graded, f., no odor. (12:00)
					3			
D	640	0.1	N		4	4'	CLICHE	CALICHE, dry, tan, well consolidated, m.-f. xln, no odor. (12:10)
					5			
D	1124	0.1	N	PH05A	6	6'	CLICHE	SAND (Same As Above) (12:20)
					7			↑ EOP @ 6'
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH06	Date: 7/10/19					
		Project Name: PLU 184	RP Number: ZRP-3014					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: <i>probe</i>					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: <i>NA</i>					
			Total Depth: <i>4'</i>					
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLICHE	CALICHE, dry, tan, prly cnsld, p. x ln, no odor, fill.
					1			
M	<124	0.1	N	PH06	2	2' (SP)		SAND, moist, brown-red, prly graded, p., no odor, trace vegetation/roots. (12:30)
					3			
D	<124	0.3	N	PH06A	4	4'	CLICHE	CALICHE, dry, tan, mod. - wll cnsld, p. x ln, no odor. (12:40)
					5			↑ EOP @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH07	Date: 7/10/19					
		Project Name: PLU 184	RP Number: 2AP-3014					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Track hoe					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: N/A					
		Total Depth: 4'						
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLAYE (fill)	CLAYE, dark tan, poorly consolidated, f.-m. xla, no odor, fill.
					1			
N	<124	9.3	N	PH07	2	2'	(SP)	SAND, moist, brn-red, prly graded, f.-m., slight petro odor, (12:50)
					3			
N	<124	0.4	N	PH07A	4	4'	(SP)	SAND, moist, brn-red, prly graded, f.-m., no odor, (13:00)
					5			↑ FOF@4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH08	Date: 7/14/19					
		Project Name: PLU 184	RP Number: ZRP-3014					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Truck core					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: N/A					
			Total Depth: 4'					
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP)	SAND, dry, brown-red, poorly graded, f., trace vegetation/roots, no odor.
					1			
M	124	0.4	N	PH08	2	2'	(SP)	
					3			
D	640	0.2	N	PH08A	4	4'	CLCHE	CALICHE, dry, tan, well cnsld, f.-m. xln, no odor. (10:55) ↑ EOP@4'
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH09		Date: 7/11/19		
				Project Name: PLU 184		RP Number: 2RP-3014		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: BB		Method: truck bore		
Lat/Long:		Field Screening: CHLORIDES, PID.		Hole Diameter: NA		Total Depth: 4'		
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLAYE, fin.	CALICHE, dry, tan, prly ensld, f.m. xln, no odor, API.
					1			
m	268	0.1	N	PH09	2	2'	(SP)	SAND, no. 87, brown-red, prly graded, f., no odor. (11:05)
					3			
m	268	0.1	N	PH09A	4	4'	(SP)	SAND (same as above) (11:15)
					5			↑ FOP @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH10 Date: 7/11/19						
Project Name: PLV 184		RP Number: 2AP-3014						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB						
Lat/Long:	Field Screening: CHLORIDES, PID.	Method: Track hoe						
Comment: All Chloride test include a 60% error factor.		Hole Diameter: NA						
Total Depth: 4'								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLAYE FILL	CALICHE, dry, tan, poly crsld, f-m. xla, no odor, fill.
					1			
m	<124	0-1	N	PH10	2	2' (SP)		SAND, moist, brown-red, poly graded, f., no odor. (11:35)
					3			
m	<124	0-3	N	PH10A	4	4' (SP)		SAA (Same As Above) (11:50)
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

FOP @ 4'

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH01		Date: 7/11/19		
				Project Name: PLU 184		RP Number: 2AP-4397, 2AP-4396		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: BB		Method: Track hoe		
Lat/Long:		Field Screening: CHLORIDES, PID.		Hole Diameter: NA		Total Depth: 22'		
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP)	SAND w/ caliche gravel, moist, brown, prly graded, f.-m., strong petro odor, trace vegetation/roots.
					1			
m	10,000	36.2	Y/bm	PH01	2	2'	(SP)	(12:15)
					3			SAND w/ caliche gravel, moist, brown, prly graded, f.-m., no odor
m	10,000	1.2	N		4	4'	(SP)	(12:25)
					5			
m	6,681	1.0	N		6	6'	(SP)	SAA (Same As Above) (12:30)
					7			
m	18,088	0.4	N		8	8'	CLICHE	CALICHE, moist, tan-lt brn, prly cased, f.-m. Kln, no odor. (12:40)
					9			
m	960	0.3	N	PH01A	10	10'	CLICHE	SAA (12:50)
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH01(C2P)	Date: 7/1/19					
		Project Name: PLU 184	RP Number: ZAP-4397, ZAP4396					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Truck haul					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: N/A					
Total Depth: 22'								
Comment All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	2022	0.3	N		12	12'	(SP)	SAT (13:00)
					13			
M	1651	0.1	N		14	14'	(SP)	SAND, moist, light brown, poorly graded, f., no odor, (13:10)
					15			
M	1651	0.3	N	PH013	16	16'	(SP)	SAT (13:20)
					17			
M	1235	0.2	N		18	18'	(SP)	SAT (13:25)
					19			
M	1696	0.3	N		20	20'	(SP)	SAT (13:30)
					21			
M	1235	0.3	N	PH01C	22	22'	(SP)	SAT (13:40)
					23			
					24			
								Edge 22'

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH02 Date: 7/11/19						
Project Name: PLU 184		RP Number: 2RP-4396, 2RP-4397						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB						
Lat/Long:	Field Screening: CHLORIDES, PID.	Method: Hand Auger						
Hole Diameter: 3.5"		Total Depth: 4'						
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP)	SAND, moist, brown-red, poly graded, f.-m., some vegetation/roots, strong petro odor.
					1			
M	2124	26.3	N	PH02	2	2'	(SP)	SAA (Same As Above) (14:20)
					3			
M	2124	28.2	N	PH02A	4	4'	(SP)	SAND, moist, brown-red, poly graded, f.-m., trace petro odor. (14:25)
					5			↑ EOP @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH03 Date: 7/1/19 - 7/12/19
Project Name: PLU 184		RP Number: 241-4396, 241-4397
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB
Lat/Long:	Field Screening: CHLORIDES, PID.	Method: Truckhoe
Comment: All Chloride test include a 60% error factor.		Hole Diameter: N/A
Total Depth: 22'		

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP)	SAND, dry, brown, prly graded, f.-m. some vegetation/roots, moderate petro odor.
P	499	6.3	N	PH03	2	2'	(SP)	SAA (Same As Above) (14:35)
					3			SAND, moist, brown, prly graded, f.-m., no odor.
PM	2156	0.6	N		4	4'	(SP)	SAA (Same As Above) (14:45)
					5			
PM	1651	0.3	N		6	6'	(SP)	SAA (14:50) 7/12 ↓
					7			
M	3174	2.3	N		8	8'	(SP)	SAA (09:07)
					9			
M	1235	2.0	N		10	10'	(SP)	SAA (09:10)
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH03 (cont)		Date: 7/12/19		
				Project Name: PLU 184		RP Number: 2AP-4396, 2AP-4397		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: BB		Method: EXCAVATOR		
Lat/Long:		Field Screening: CHLORIDES, PID.		Hole Diameter: N/A		Total Depth: 22'		
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
m	960	1.3	N		12'	12'	(SP)	SAT (09:15)
					13'			
m	870	1.5	N	PH03A	14'	14'	(SP)	SAND, moist, lt brown, pily graded, f., no odor. (09:25)
					15'			
m	870	1.0	N		16'	16'	(SP)	SAT (09:35)
					17'			
m	1433	0.8	N		18'	18'	(SP)	SAT (09:40)
					19'			
m	1043	1.0	N		20'	20'	(SP)	SAT (09:50)
					21'			
m	1043	1.1	N	PH03B	22'	22'	(SP)	SAT (09:55)
					23'			
					24'			
								EOP @ 22'

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PLU 184 Project Name: PLU 184	Date: 7/12/19 RP Number: 2AP-4397, 2AP-4398					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB Hole Diameter: N/A	Method: Trade hole Total Depth: 4'					
Lat/Long:		Field Screening: CHLORIDES, PID.						
Comment All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			SAND, moist, brown, poorly graded, f.-m., some vegetation/roots, trace calc. ch. gravel, no odor. (10:10)
					1			
M	377	0.8	N	PLU 184	2	2'	(SP) (10:10)	SAND, moist, brown, poorly graded, f.-m., no odor. (10:20) 15N
					3			
M	377	0.4	N	PLU 184	4	4'	(SP) (10:20)	
					5			↑ EOP @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH05	Date: 7/12/19					
		Project Name: PLW 184	RP Number: ZAP-4397, ZAP-4396					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Track hoe					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: N/A					
Total Depth: 4'								
Comment All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP)	SAND, moist, brown, poorly sorted, f.-m., some vegetation/rocks, trace calcareous gravel, no odor.
					1			
M	<124	0.3	N	PH05	2	2'	(SP)	SAND, moist, brown, poorly sorted, f.-m., no odor. (10:35)
					3			
M	<124	0.3	N	PH05A	4	4'	(SP)	SAA (same as above) (10:45)
					5			↑ EOP@4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH06	Date: 7/12/19					
		Project Name: PLU 184	RP Number: ZAP-4396, ZAP-4397					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Track hole					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: N/A					
Total Depth: 4'								
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			SAND, dry, brown, prly graded, f.-m., some vegetation/roots, trace caliche sandy, no odor.
					1			
M	4124	0.8	N	PH06	2	2' (SP)		
					3			
M	268	0.7	N	PH06A	4	4' (SP)		SAND (same as above) (10:00)
					5			EOP @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH07 Project Name: PLU 184	Date: 7/12/19 RP Number: 2AP-4396, 2AP-4397
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: treehouse
Lat/Long:		Field Screening: CHLORIDES, PID	Hole Diameter: N/A
Total Depth: 4'		Comment: All Chloride test include a 60% error factor.	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP)	SAND, dry, brown, pty graded, f.-m., some vegetation/roots, no odor.
					1			
D	<124	0.3	N	PH07	2	2'	(SP)	
					3			
D	<124	0.3	N	PH07A	4	4'	(SP)	SAA (11:20)
					5			 For 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH08		Date: 7/12/19		
				Project Name: PLU 184		RP Number: ZAP-4397, ZAP-4396		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: BB		Method: EXCAVATOR		
Lat/Long:		Field Screening: CHLORIDES, PID		Hole Diameter: N/A		Total Depth: 4'		
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP)	SAND, dry, brown-red, p. m., some vegetation/roots, no odor.
					1			
D	<124	0.9	N	PH08	2	2'	(SP)	SAA (Same As Above) (11:40)
					3			
D	<124	1.0	N	PH08A	4	4'	(SP)	SAA (11:50)
					5			EOP @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH09	Date: 7/12/19					
		Project Name: PLW 184	RP Number: ZAP-4396, ZAP-4397					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: EXCAVATOR Hand Auger					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: 3.5"					
		Total Depth: 4'						
Comment All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP)	SAND, dry, brown - lt brn, prly graded, f.-m., some some vegetation/roots, no odor.
					1			
0	124	1.5	N	PH09	2	2'	(SP) (13:05)	
					3			etc Sand, dry, brown - lt brn, prly graded, f.-m., some calc. gravel, no odor.
0	563	1.3	N	PH09A	4	4'	(SP) (13:20)	
					5			↑ EOB@4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH10	Date: 5/14/19 7/12/19
Project Name: Corral Canyon Fed III Flowline PLU 184		RP Number: 2AP-5201 2AP-4396, 2AP-4397	
Logged By: BEN BELILL		Method: Hand Auger	
Lat/Long:		Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO.	Hole Diameter: 3.5"
Total Depth: 4'		Comment: All Chloride test include a 60% error factor.	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		SP	SAND, dry, brown-lt brown, prly graded, f.-m., some vegetation/roots, no odor.
					1			
D	124	1.1	N	PH10	2	2' (SP)	SP	SAT (Same As Above) (1335)
					3			SAND w/ calciche gravel, dry, lt brown, prly graded, f.-m., no odor.
D	124	1.5	N	PH10A	4	4'	SP	(1340)
					17			↑ EOB @ 4'
					18			
					19			
					20			
					21			
					22			
					23			
					24			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH01	Date: 7/16/19					
		Project Name: PLU 184	RP Number: ZRP-4397, ZRP-4396					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand Auger					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: 3.5"					
		Total Depth: 4'						
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLAYE FILL	CLAYE, lt brown, dry, prly consolidated, f. xln, no odor, fill.
					1			
M	<124	1.3	N	BH01	2	2'	(SC)	SAND ⁸⁰ , clayey SAND, moist, brown-red, poorly sorted, f., no odor (09:30)
					3			
M	<124	0.1	N	BH01A	4	4'	(SC)	SAA (Same As Above) (09:40)
					5			FOR 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH02 Date: 7/16/19						
		Project Name: PLU184 RP Number: 2RP-4397, 2RP-4398						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB Method: Hand Auger						
Lat/Long:	Field Screening: CHLORIDES, PID.	Hole Diameter: 3.5" Total Depth: 4'						
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLAYE fill.	CLAYE, dry, lt brown-tan, prly cn sld, f. xln, no odor, fill.
					1			
M	<124	2.4	N	BH02	2	2'	SC	clayey SAND, moist, brown-red, prly graded, f., no odor, (10:05)
					3			
M	<124	2.4	N	BH02A	4	4'	SC	SAND (same as above) (10:15)
					5			EOB @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH03		Date: 7/16/19		
				Project Name: PLU 184		RP Number: 2RP-4397, 2RP-4396		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: BB		Method: Hand Auger		
Lat/Long:		Field Screening: CHLORIDES, PID.		Hole Diameter: 3.5"		Total Depth: 4'		
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CALICHE fill	CALICHE , dry, lt brown-tan, prly cnsld, f.-m. xln, no odor, fill.
					1			
m	<124	1.7	N	BH03	2	2'	SC	clayey SAND , moist, brown-red, prly graded, f., no odor. (10:30)
					3			
m	<124	2.3	N	BH03A	4	4'	SC	SAND (Same As Above) (10:40)
					5			EOB 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH04 Date: 7/16/19						
Project Name: PLU 184		RP Number: 2RP-4397, 2RP-4396						
Logged By: BB		Method: Hand Auger						
Hole Diameter: 3.5"		Total Depth: 4'						
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening: CHLORIDES, PID						
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		CLAYE fill	CALICHE, dry, lt brown-tan, prly cased, f.-m. xln, no odor, fill.
					1			
m	<124	1.5	✓	BH04	2	2'	SC	Clayey SAND, moist, brown-red, prly graded, p., no odor. (10:50)
					3			
m	<124	2.4	✓	BH04A	4	4'	SC	SNA (Same As Above) (11:00)
					5			↑ EOB @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

ATTACHMENT 3: PHOTOGRAPHIC LOG





Southwest facing view of release/assessment area (2RP-3014).

Project: 012918039	XTO Energy, Inc. Poker Lake Unit 184 Battery (Delaware C)	 Advancing Opportunity
July 2019	Photographic Log	



West facing view of release/assessment area (2RP-3014).

Project: 012918039	XTO Energy, Inc. Poker Lake Unit 184 Battery (Delaware C)	 Advancing Opportunity
July 2019	Photographic Log	



Southeast facing view of pasture area north of the pad.

Project: 012918039	XTO Energy, Inc. Poker Lake Unit 184 Battery (Delaware C)	 Advancing Opportunity
July 2019	Photographic Log	



South facing view of release/assessment area (2RP-4396, 2RP-4397).

Project: 012918039	XTO Energy, Inc. Poker Lake Unit 184 Battery (Delaware C)	 Advancing Opportunity
July 2019	Photographic Log	



Northwest facing view of release/assessment area (2RP-4396, 2RP-4397).

Project: 012918039	XTO Energy, Inc. Poker Lake Unit 184 Battery (Delaware C)	 Advancing Opportunity
July 2019	Photographic Log	



West facing view of pasture area north of the process equipment (2RP-4396, 2RP-4397).

Project: 012918039	XTO Energy, Inc. Poker Lake Unit 184 Battery (Delaware C)	 Advancing Opportunity
July 2019	Photographic Log	



Excavation area (2RP-4396, 2RP-4397).

Project: 012918039	XTO Energy, Inc. Poker Lake Unit 184 Battery (Delaware C)	 Advancing Opportunity
October 2019	Photographic Log	



Backfilled/contoured excavation area (2RP-4396, 2RP-4397).

Project: 012918039	XTO Energy, Inc. Poker Lake Unit 184 Battery (Delaware C)	 Advancing Opportunity
October 2019	Photographic Log	

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



Analytical Report 575572

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 184 2RP-3014

06-DEC-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)



06-DEC-18

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

Reference: XENCO Report No(s): **575572**
PLU 184 2RP-3014
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) 575572. 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. 575572 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 575572****LT Environmental, Inc., Arvada, CO**

PLU 184 2RP-3014

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	02-06-18 13:25	0.5 ft	575572-001
SS2	S	02-06-18 13:29	0.5 ft	575572-002
SS3	S	02-06-18 13:32	0.5 ft	575572-003
SS4	S	02-06-18 13:24	0.5 ft	575572-004
SS5	S	02-06-18 13:27	Surface	575572-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 184 2RP-3014

Project ID:
Work Order Number(s): 575572

Report Date: 06-DEC-18
Date Received: 02/07/2018

Sample receipt non conformances and comments:

Per clients email request added sample depths (6") to samples 001-004 JKR 08/14/18 New Version
Generated Ver_1_001

Per clients email request corrected samples 001-004 sample depths from 6" to 0.5'. JKR 12/06/18 New
Version Generated V_1_002

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3040520 BTEX by EPA 8021B

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



Certificate of Analysis Summary 575572

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184 2RP-3014



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Wed Feb-07-18 08:00 am

Report Date: 06-DEC-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	575572-001	575572-002	575572-003	575572-004	575572-005	
	<i>Field Id:</i>	SS1	SS2	SS3	SS4	SS5	
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft	Surface-	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Feb-06-18 13:25	Feb-06-18 13:29	Feb-06-18 13:32	Feb-06-18 13:24	Feb-06-18 13:27	
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-07-18 13:00	Feb-07-18 13:00	Feb-07-18 13:00	Feb-07-18 13:00	Feb-07-18 13:00	
	<i>Analyzed:</i>	Feb-07-18 16:03	Feb-07-18 16:22	Feb-07-18 16:46	Feb-07-18 17:05	Feb-07-18 17:24	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	
m,p-Xylenes		<0.00402 0.00402	<0.00399 0.00399	<0.00396 0.00396	<0.00404 0.00404	<0.00402 0.00402	
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-12-18 17:00	Feb-12-18 17:00	Feb-12-18 17:00	Feb-12-18 17:00	Feb-12-18 17:00	
	<i>Analyzed:</i>	Feb-13-18 01:06	Feb-13-18 01:13	Feb-13-18 01:20	Feb-13-18 01:27	Feb-13-18 01:33	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		25.7 4.94	<5.00 5.00	<4.92 4.92	282 5.00	500 4.91	
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-08-18 07:00	Feb-08-18 07:00	Feb-08-18 07:00	Feb-08-18 07:00	Feb-08-18 07:00	
	<i>Analyzed:</i>	Feb-08-18 10:16	Feb-08-18 11:18	Feb-08-18 11:38	Feb-08-18 11:58	Feb-08-18 12:18	
	<i>Units/RL:</i>	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	
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	694 14.9	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	154 14.9	
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	848 14.9	

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 575572

LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS1
Lab Sample Id: 575572-001

Matrix: Soil
Date Collected: 02.06.18 13.25

Date Received: 02.07.18 08.00
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: LRI

Analyst: LRI

Seq Number: 3040835

Date Prep: 02.12.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.7	4.94	mg/kg	02.13.18 01.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040495

Date Prep: 02.08.18 07.00

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	02.08.18 10.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.18 10.16	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.08.18 10.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.18 10.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	02.08.18 10.16	
o-Terphenyl	84-15-1	84	%	70-135	02.08.18 10.16	



Certificate of Analytical Results 575572



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS1
Lab Sample Id: 575572-001

Matrix: Soil
Date Collected: 02.06.18 13.25

Date Received: 02.07.18 08.00
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040520

Date Prep: 02.07.18 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.07.18 16.03	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.07.18 16.03	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.07.18 16.03	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.07.18 16.03	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.07.18 16.03	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.07.18 16.03	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.07.18 16.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	80-120	02.07.18 16.03		
4-Bromofluorobenzene	460-00-4	106	%	80-120	02.07.18 16.03		



Certificate of Analytical Results 575572



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS2 Matrix: Soil Date Received: 02.07.18 08.00
 Lab Sample Id: 575572-002 Date Collected: 02.06.18 13.29 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: LRI Date Prep: 02.12.18 17.00 Basis: Wet Weight
 Seq Number: 3040835

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.13.18 01.13	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.08.18 07.00 Basis: Wet Weight
 Seq Number: 3040495

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.18 11.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.18 11.18	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.08.18 11.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.18 11.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	02.08.18 11.18	
o-Terphenyl	84-15-1	103	%	70-135	02.08.18 11.18	



Certificate of Analytical Results 575572



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS2
Lab Sample Id: 575572-002

Matrix: Soil
Date Collected: 02.06.18 13.29

Date Received: 02.07.18 08.00
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.07.18 13.00

Basis: Wet Weight

Seq Number: 3040520

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.07.18 16.22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.07.18 16.22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.07.18 16.22	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.07.18 16.22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.07.18 16.22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.07.18 16.22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.07.18 16.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	85	%	80-120	02.07.18 16.22		
4-Bromofluorobenzene	460-00-4	95	%	80-120	02.07.18 16.22		



Certificate of Analytical Results 575572



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS3 Matrix: Soil Date Received: 02.07.18 08.00
 Lab Sample Id: 575572-003 Date Collected: 02.06.18 13.32 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: LRI Date Prep: 02.12.18 17.00 Basis: Wet Weight
 Seq Number: 3040835

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.92	4.92	mg/kg	02.13.18 01.20	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.08.18 07.00 Basis: Wet Weight
 Seq Number: 3040495

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.18 11.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.18 11.38	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.08.18 11.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.18 11.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.08.18 11.38	
o-Terphenyl	84-15-1	94	%	70-135	02.08.18 11.38	



Certificate of Analytical Results 575572



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS3
Lab Sample Id: 575572-003

Matrix: Soil
Date Collected: 02.06.18 13.32

Date Received: 02.07.18 08.00
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.07.18 13.00

Basis: Wet Weight

Seq Number: 3040520

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.07.18 16.46	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.07.18 16.46	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.07.18 16.46	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.07.18 16.46	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.07.18 16.46	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.07.18 16.46	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.07.18 16.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	80-120	02.07.18 16.46		
4-Bromofluorobenzene	460-00-4	100	%	80-120	02.07.18 16.46		



Certificate of Analytical Results 575572



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS4 Matrix: Soil Date Received: 02.07.18 08.00
 Lab Sample Id: 575572-004 Date Collected: 02.06.18 13.24 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: LRI Date Prep: 02.12.18 17.00 Basis: Wet Weight
 Seq Number: 3040835

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	282	5.00	mg/kg	02.13.18 01.27		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.08.18 07.00 Basis: Wet Weight
 Seq Number: 3040495

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.18 11.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.18 11.58	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.08.18 11.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.18 11.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.08.18 11.58	
o-Terphenyl	84-15-1	93	%	70-135	02.08.18 11.58	



Certificate of Analytical Results 575572



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS4
Lab Sample Id: 575572-004

Matrix: Soil
Date Collected: 02.06.18 13.24

Date Received: 02.07.18 08.00
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040520

Date Prep: 02.07.18 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.07.18 17.05	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.07.18 17.05	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.07.18 17.05	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.07.18 17.05	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.07.18 17.05	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.07.18 17.05	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.07.18 17.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	80-120	02.07.18 17.05		
1,4-Difluorobenzene	540-36-3	82	%	80-120	02.07.18 17.05		



Certificate of Analytical Results 575572



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS5
Lab Sample Id: 575572-005

Matrix: Soil
Date Collected: 02.06.18 13.27

Date Received: 02.07.18 08.00
Sample Depth: Surface

Analytical Method: Inorganic Anions by EPA 300

Tech: LRI

Analyst: LRI

Seq Number: 3040835

Date Prep: 02.12.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	500	4.91	mg/kg	02.13.18 01.33		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040495

Date Prep: 02.08.18 07.00

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	02.08.18 12.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	694	14.9	mg/kg	02.08.18 12.18		1
Oil Range Hydrocarbons (ORO)	PHCG2835	154	14.9	mg/kg	02.08.18 12.18		1
Total TPH	PHC635	848	14.9	mg/kg	02.08.18 12.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.08.18 12.18	
o-Terphenyl	84-15-1	96	%	70-135	02.08.18 12.18	



Certificate of Analytical Results 575572



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-3014

Sample Id: SS5
Lab Sample Id: 575572-005

Matrix: Soil
Date Collected: 02.06.18 13.27

Date Received: 02.07.18 08.00
Sample Depth: Surface

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.07.18 13.00

Basis: Wet Weight

Seq Number: 3040520

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.07.18 17.24	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.07.18 17.24	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.07.18 17.24	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.07.18 17.24	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.07.18 17.24	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.07.18 17.24	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.07.18 17.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.07.18 17.24		
4-Bromofluorobenzene	460-00-4	94	%	80-120	02.07.18 17.24		



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.

PLU 184 2RP-3014

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040835

MB Sample Id: 7638978-1-BLK

Matrix: Solid

LCS Sample Id: 7638978-1-BKS

Prep Method: E300P

Date Prep: 02.12.18

LCSD Sample Id: 7638978-1-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	272	109	265	106	90-110	3	20	mg/kg	02.12.18 22:18	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040835

Parent Sample Id: 575484-017

Matrix: Soil

MS Sample Id: 575484-017 S

Prep Method: E300P

Date Prep: 02.12.18

MSD Sample Id: 575484-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1340	250	1590	100	1590	100	90-110	0	20	mg/kg	02.13.18 00:17	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040835

Parent Sample Id: 575484-018

Matrix: Soil

MS Sample Id: 575484-018 S

Prep Method: E300P

Date Prep: 02.12.18

MSD Sample Id: 575484-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	743	249	970	91	965	89	90-110	1	20	mg/kg	02.12.18 22:39	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3040495

MB Sample Id: 7638782-1-BLK

Matrix: Solid

LCS Sample Id: 7638782-1-BKS

Prep Method: TX1005P

Date Prep: 02.08.18

LCSD Sample Id: 7638782-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1030	103	838	84	70-135	21	35	mg/kg	02.08.18 09:35	
Diesel Range Organics (DRO)	<15.0	1000	1140	114	948	95	70-135	18	35	mg/kg	02.08.18 09:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		116		94		70-135	%	02.08.18 09:35
o-Terphenyl	101		113		95		70-135	%	02.08.18 09:35

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.

PLU 184 2RP-3014

Analytical Method: TPH by SW8015 Mod

Seq Number: 3040495

Parent Sample Id: 575572-001

Matrix: Soil

MS Sample Id: 575572-001 S

Prep Method: TX1005P

Date Prep: 02.08.18

MSD Sample Id: 575572-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	822	82	832	83	70-135	1	35	mg/kg	02.08.18 10:36	
Diesel Range Organics (DRO)	<15.0	999	966	97	965	97	70-135	0	35	mg/kg	02.08.18 10:36	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		95		70-135	%	02.08.18 10:36
o-Terphenyl	85		85		70-135	%	02.08.18 10:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040520

MB Sample Id: 7638795-1-BLK

Matrix: Solid

LCS Sample Id: 7638795-1-BKS

Prep Method: SW5030B

Date Prep: 02.07.18

LCSD Sample Id: 7638795-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0796	79	0.0720	72	70-130	10	35	mg/kg	02.07.18 13:11	
Toluene	<0.00202	0.101	0.0844	84	0.0770	77	70-130	9	35	mg/kg	02.07.18 13:11	
Ethylbenzene	<0.00202	0.101	0.0969	96	0.0888	89	71-129	9	35	mg/kg	02.07.18 13:11	
m,p-Xylenes	<0.00404	0.202	0.191	95	0.175	87	70-135	9	35	mg/kg	02.07.18 13:11	
o-Xylene	<0.00202	0.101	0.0949	94	0.0891	89	71-133	6	35	mg/kg	02.07.18 13:11	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		94		91		80-120	%	02.07.18 13:11
4-Bromofluorobenzene	101		108		114		80-120	%	02.07.18 13:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040520

Parent Sample Id: 575522-001

Matrix: Soil

MS Sample Id: 575522-001 S

Prep Method: SW5030B

Date Prep: 02.07.18

MSD Sample Id: 575522-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00395	0.198	0.0511	26	0.0473	48	70-130	8	35	mg/kg	02.07.18 13:49	X
Toluene	<0.00395	0.198	0.0450	23	0.0411	41	70-130	9	35	mg/kg	02.07.18 13:49	X
Ethylbenzene	<0.00395	0.198	0.0434	22	0.0381	38	71-129	13	35	mg/kg	02.07.18 13:49	X
m,p-Xylenes	<0.00791	0.395	0.0849	21	0.0716	36	70-135	17	35	mg/kg	02.07.18 13:49	X
o-Xylene	<0.00395	0.198	0.0441	22	0.0380	38	71-133	15	35	mg/kg	02.07.18 13:49	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		83		80-120	%	02.07.18 13:49
4-Bromofluorobenzene	115		111		80-120	%	02.07.18 13:49

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



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

CHAIN OF CUSTODY

Page 1 of 1

Revision 2016

[illegible]

Analytical Report 630871

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU 184

012918039

23-JUL-19

Collected By: Client



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

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

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

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



23-JUL-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **630871**

PLU 184

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 630871. 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. 630871 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 630871****LT Environmental, Inc., Arvada, CO**

PLU 184

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	07-10-19 10:30	2 ft	630871-001
PH01A	S	07-10-19 10:45	6 ft	630871-002
PH02	S	07-10-19 11:00	2 ft	630871-003
PH02A	S	07-10-19 11:10	4 ft	630871-004
PH03	S	07-10-19 11:20	2 ft	630871-005
PH03A	S	07-10-19 11:25	4 ft	630871-006
PH04	S	07-10-19 11:40	2 ft	630871-007
PH04A	S	07-10-19 11:50	4 ft	630871-008
PH05	S	07-10-19 12:00	2 ft	630871-009
PH05A	S	07-10-19 12:20	6 ft	630871-010
PH06	S	07-10-19 12:30	2 ft	630871-011
PH06A	S	07-10-19 12:40	4 ft	630871-012
PH07	S	07-10-19 12:50	2 ft	630871-013
PH07A	S	07-10-19 13:00	4 ft	630871-014
PH08	S	07-11-19 10:50	2 ft	630871-015
PH08A	S	07-11-19 10:55	4 ft	630871-016
PH09	S	07-11-19 11:05	2 ft	630871-017
PH09A	S	07-11-19 11:15	4 ft	630871-018
PH10	S	07-11-19 11:35	2 ft	630871-019
PH10A	S	07-11-19 11:50	4 ft	630871-020



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 184

Project ID: 012918039
Work Order Number(s): 630871

Report Date: 23-JUL-19
Date Received: 07/15/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3095965 BTEX by EPA 8021B

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



Certificate of Analysis Summary 630871

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184

Project Id: 012918039
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-15-19 11:55 am
Report Date: 23-JUL-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	630871-001	630871-002	630871-003	630871-004	630871-005	630871-006
	<i>Field Id:</i>	PH01	PH01A	PH02	PH02A	PH03	PH03A
	<i>Depth:</i>	2- ft	6- ft	2- ft	4- ft	2- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-10-19 10:30	Jul-10-19 10:45	Jul-10-19 11:00	Jul-10-19 11:10	Jul-10-19 11:20	Jul-10-19 11:25
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37
	<i>Analyzed:</i>	Jul-19-19 19:54	Jul-20-19 12:14	Jul-20-19 12:34	Jul-19-19 20:55	Jul-19-19 21:15	Jul-20-19 12:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198
Ethylbenzene		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198
m,p-Xylenes		<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398	<0.00397 0.00397
o-Xylene		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198
Total Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198
Total BTEX		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-17-19 08:30	Jul-17-19 08:30	Jul-17-19 08:30	Jul-17-19 08:30	Jul-17-19 10:45	Jul-17-19 10:45
	<i>Analyzed:</i>	Jul-17-19 10:30	Jul-17-19 10:35	Jul-17-19 10:40	Jul-17-19 10:45	Jul-17-19 14:17	Jul-17-19 14:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1650 24.8	19.0 5.01	26.1 4.97	64.3 5.04	51.1 4.95	62.8 5.03
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00
	<i>Analyzed:</i>	Jul-22-19 11:36	Jul-22-19 12:51	Jul-22-19 13:16	Jul-22-19 13:40	Jul-22-19 14:05	Jul-22-19 14:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 630871

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184

Project Id: 012918039
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-15-19 11:55 am
Report Date: 23-JUL-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	630871-007	630871-008	630871-009	630871-010	630871-011	630871-012
	<i>Field Id:</i>	PH04	PH04A	PH05	PH05A	PH06	PH06A
	<i>Depth:</i>	2- ft	4- ft	2- ft	6- ft	2- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-10-19 11:40	Jul-10-19 11:50	Jul-10-19 12:00	Jul-10-19 12:20	Jul-10-19 12:30	Jul-10-19 12:40
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37
	<i>Analyzed:</i>	Jul-20-19 13:14	Jul-19-19 22:15	Jul-19-19 22:35	Jul-19-19 22:55	Jul-20-19 13:34	Jul-20-19 13:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	<0.00400 0.00400	<0.00401 0.00401	<0.00399 0.00399	<0.00402 0.00402
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-17-19 10:45	Jul-17-19 10:10	Jul-17-19 10:10	Jul-17-19 10:10	Jul-17-19 10:10	Jul-17-19 10:10
	<i>Analyzed:</i>	Jul-17-19 14:27	Jul-17-19 12:26	Jul-17-19 12:34	Jul-17-19 12:41	Jul-17-19 12:48	Jul-17-19 13:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		24.0 5.00	289 4.95	783 4.95	92.3 4.95	38.0 5.02	29.3 4.98
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00
	<i>Analyzed:</i>	Jul-22-19 14:54	Jul-22-19 15:19	Jul-22-19 15:44	Jul-22-19 16:08	Jul-22-19 16:58	Jul-22-19 17:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<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)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<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	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 630871

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184

Project Id: 012918039
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-15-19 11:55 am
Report Date: 23-JUL-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	630871-013	630871-014	630871-015	630871-016	630871-017	630871-018
	<i>Field Id:</i>	PH07	PH07A	PH08	PH08A	PH09	PH09A
	<i>Depth:</i>	2- ft	4- ft	2- ft	4- ft	2- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-10-19 12:50	Jul-10-19 13:00	Jul-11-19 10:50	Jul-11-19 10:55	Jul-11-19 11:05	Jul-11-19 11:15
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37	Jul-16-19 13:37
	<i>Analyzed:</i>	Jul-20-19 01:15	Jul-20-19 14:15	Jul-20-19 01:55	Jul-20-19 02:15	Jul-20-19 02:35	Jul-20-19 02:55
	<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	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201
m,p-Xylenes		<0.00401 0.00401	<0.00397 0.00397	<0.00398 0.00398	<0.00398 0.00398	<0.00398 0.00398	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-17-19 10:10	Jul-17-19 10:10	Jul-17-19 10:10	Jul-17-19 10:10	Jul-17-19 10:10	Jul-17-19 10:10
	<i>Analyzed:</i>	Jul-17-19 13:22	Jul-17-19 22:45	Jul-17-19 14:02	Jul-17-19 14:12	Jul-17-19 14:22	Jul-17-19 14:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11.6 4.96	20.5 5.00	<5.05 5.05	435 4.98	186 5.00	161 5.03
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00	Jul-22-19 09:00
	<i>Analyzed:</i>	Jul-22-19 17:48	Jul-22-19 18:13	Jul-22-19 18:38	Jul-22-19 19:02	Jul-22-19 19:27	Jul-22-19 19:51
	<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)		404 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		50.3 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		454 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		404 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 630871

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184

Project Id: 012918039
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-15-19 11:55 am
Report Date: 23-JUL-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	630871-019	630871-020				
	Field Id:	PH10	PH10A				
	Depth:	2- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jul-11-19 11:35	Jul-11-19 11:50				
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jul-16-19 13:37	Jul-16-19 13:37				
	Analyzed:	Jul-20-19 03:15	Jul-20-19 03:35				
	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	<0.00400 0.00400				
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				
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jul-17-19 10:10	Jul-17-19 10:10				
	Analyzed:	Jul-17-19 14:41	Jul-17-19 14:56				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		39.8 5.01	54.9 4.98				
TPH by SW8015 Mod SUB: T104704400-18-16	Extracted:	Jul-22-19 09:00	Jul-22-19 09:00				
	Analyzed:	Jul-22-19 20:15	Jul-22-19 20:40				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				
Total GRO-DRO		<15.0 15.0	<15.0 15.0				

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630871-001 Date Collected: 07.10.19 10.30 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 08.30 Basis: Wet Weight
 Seq Number: 3095586 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1650	24.8	mg/kg	07.17.19 10.30		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.22.19 09.00 Basis: Wet Weight
 Seq Number: 3096145 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 11.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 11.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 11.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 11.36	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 11.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	07.22.19 11.36	
o-Terphenyl	84-15-1	104	%	70-135	07.22.19 11.36	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01**
Lab Sample Id: 630871-001

Matrix: Soil
Date Collected: 07.10.19 10.30

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.19.19 19.54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.19.19 19.54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.19.19 19.54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.19.19 19.54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.19.19 19.54	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.19.19 19.54	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.19.19 19.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	114	%	70-130	07.19.19 19.54		
4-Bromofluorobenzene	460-00-4	94	%	70-130	07.19.19 19.54		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01A**
Lab Sample Id: 630871-002

Matrix: Soil
Date Collected: 07.10.19 10.45

Date Received: 07.15.19 11.55
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095586

Date Prep: 07.17.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.0	5.01	mg/kg	07.17.19 10.35		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 12.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 12.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 12.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 12.51	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 12.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	07.22.19 12.51	
o-Terphenyl	84-15-1	87	%	70-135	07.22.19 12.51	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01A**
Lab Sample Id: 630871-002

Matrix: Soil
Date Collected: 07.10.19 10.45

Date Received: 07.15.19 11.55
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.20.19 12.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.20.19 12.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.20.19 12.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.20.19 12.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.20.19 12.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.20.19 12.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.20.19 12.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.20.19 12.14		
4-Bromofluorobenzene	460-00-4	92	%	70-130	07.20.19 12.14		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH02** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630871-003 Date Collected: 07.10.19 11.00 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 08.30 Basis: Wet Weight
 Seq Number: 3095586 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.1	4.97	mg/kg	07.17.19 10.40		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.22.19 09.00 Basis: Wet Weight
 Seq Number: 3096145 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 13.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 13.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 13.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 13.16	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 13.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	07.22.19 13.16	
o-Terphenyl	84-15-1	88	%	70-135	07.22.19 13.16	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH02**
Lab Sample Id: 630871-003

Matrix: Soil
Date Collected: 07.10.19 11.00

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.20.19 12.34	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.20.19 12.34	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.20.19 12.34	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.20.19 12.34	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.20.19 12.34	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.20.19 12.34	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.20.19 12.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.20.19 12.34		
4-Bromofluorobenzene	460-00-4	97	%	70-130	07.20.19 12.34		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH02A**
Lab Sample Id: 630871-004

Matrix: Soil
Date Collected: 07.10.19 11.10

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095586

Date Prep: 07.17.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	64.3	5.04	mg/kg	07.17.19 10.45		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 13.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 13.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 13.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 13.40	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 13.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	07.22.19 13.40	
o-Terphenyl	84-15-1	89	%	70-135	07.22.19 13.40	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH02A**
Lab Sample Id: 630871-004

Matrix: Soil
Date Collected: 07.10.19 11.10

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.19.19 20.55	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.19.19 20.55	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.19.19 20.55	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.19.19 20.55	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.19.19 20.55	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.19.19 20.55	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.19.19 20.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	07.19.19 20.55		
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.19.19 20.55		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03**
Lab Sample Id: 630871-005

Matrix: Soil
Date Collected: 07.10.19 11.20

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095727

Date Prep: 07.17.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.1	4.95	mg/kg	07.17.19 14.17		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 14.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 14.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 14.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 14.05	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 14.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	07.22.19 14.05	
o-Terphenyl	84-15-1	98	%	70-135	07.22.19 14.05	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03**
Lab Sample Id: 630871-005

Matrix: Soil
Date Collected: 07.10.19 11.20

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.19.19 21.15	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.19.19 21.15	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.19.19 21.15	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.19.19 21.15	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.19.19 21.15	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.19.19 21.15	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.19.19 21.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	07.19.19 21.15		
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.19.19 21.15		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03A**
Lab Sample Id: 630871-006

Matrix: Soil
Date Collected: 07.10.19 11.25

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095727

Date Prep: 07.17.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	62.8	5.03	mg/kg	07.17.19 14.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.22.19 14.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.22.19 14.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.22.19 14.29	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.22.19 14.29	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.22.19 14.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	07.22.19 14.29	
o-Terphenyl	84-15-1	108	%	70-135	07.22.19 14.29	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03A**
Lab Sample Id: 630871-006

Matrix: Soil
Date Collected: 07.10.19 11.25

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.20.19 12.54	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.20.19 12.54	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.20.19 12.54	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.20.19 12.54	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.20.19 12.54	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.20.19 12.54	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.20.19 12.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	07.20.19 12.54		
1,4-Difluorobenzene	540-36-3	113	%	70-130	07.20.19 12.54		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH04**
Lab Sample Id: 630871-007

Matrix: Soil
Date Collected: 07.10.19 11.40

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095727

Date Prep: 07.17.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.0	5.00	mg/kg	07.17.19 14.27		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 14.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 14.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 14.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 14.54	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 14.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	07.22.19 14.54	
o-Terphenyl	84-15-1	94	%	70-135	07.22.19 14.54	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH04**
Lab Sample Id: 630871-007

Matrix: Soil
Date Collected: 07.10.19 11.40

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.20.19 13.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.20.19 13.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.20.19 13.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.20.19 13.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.20.19 13.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.20.19 13.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.20.19 13.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	07.20.19 13.14		
1,4-Difluorobenzene	540-36-3	113	%	70-130	07.20.19 13.14		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH04A**
Lab Sample Id: 630871-008

Matrix: Soil
Date Collected: 07.10.19 11.50

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	289	4.95	mg/kg	07.17.19 12.26		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 15.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 15.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 15.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 15.19	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 15.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	07.22.19 15.19	
o-Terphenyl	84-15-1	88	%	70-135	07.22.19 15.19	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH04A**
Lab Sample Id: 630871-008

Matrix: Soil
Date Collected: 07.10.19 11.50

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.19.19 22.15	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.19.19 22.15	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.19.19 22.15	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.19.19 22.15	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.19.19 22.15	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.19.19 22.15	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.19.19 22.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	07.19.19 22.15		
1,4-Difluorobenzene	540-36-3	109	%	70-130	07.19.19 22.15		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH05**
Lab Sample Id: 630871-009

Matrix: Soil
Date Collected: 07.10.19 12.00

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	783	4.95	mg/kg	07.17.19 12.34		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 15.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 15.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 15.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 15.44	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 15.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	07.22.19 15.44	
o-Terphenyl	84-15-1	95	%	70-135	07.22.19 15.44	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH05**
Lab Sample Id: 630871-009

Matrix: Soil
Date Collected: 07.10.19 12.00

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.19.19 22.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.19.19 22.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.19.19 22.35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.19.19 22.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.19.19 22.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.19.19 22.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.19.19 22.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	07.19.19 22.35		
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.19.19 22.35		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH05A**
Lab Sample Id: 630871-010

Matrix: Soil
Date Collected: 07.10.19 12.20

Date Received: 07.15.19 11.55
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	92.3	4.95	mg/kg	07.17.19 12.41		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 16.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 16.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 16.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 16.08	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 16.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	07.22.19 16.08	
o-Terphenyl	84-15-1	89	%	70-135	07.22.19 16.08	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH05A**
Lab Sample Id: 630871-010

Matrix: Soil
Date Collected: 07.10.19 12.20

Date Received: 07.15.19 11.55
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.19.19 22.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.19.19 22.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.19.19 22.55	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.19.19 22.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.19.19 22.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.19.19 22.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.19.19 22.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	07.19.19 22.55		
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.19.19 22.55		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH06**
Lab Sample Id: 630871-011

Matrix: Soil
Date Collected: 07.10.19 12.30

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38.0	5.02	mg/kg	07.17.19 12.48		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.22.19 16.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.22.19 16.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.22.19 16.58	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.22.19 16.58	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.22.19 16.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	07.22.19 16.58	
o-Terphenyl	84-15-1	108	%	70-135	07.22.19 16.58	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH06**
Lab Sample Id: 630871-011

Matrix: Soil
Date Collected: 07.10.19 12.30

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.20.19 13.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.20.19 13.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.20.19 13.34	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.20.19 13.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.20.19 13.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.20.19 13.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.20.19 13.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	07.20.19 13.34		
1,4-Difluorobenzene	540-36-3	112	%	70-130	07.20.19 13.34		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH06A**
Lab Sample Id: 630871-012

Matrix: Soil
Date Collected: 07.10.19 12.40

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.3	4.98	mg/kg	07.17.19 13.15		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 17.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 17.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 17.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 17.23	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 17.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	07.22.19 17.23	
o-Terphenyl	84-15-1	95	%	70-135	07.22.19 17.23	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH06A**
Lab Sample Id: 630871-012

Matrix: Soil
Date Collected: 07.10.19 12.40

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.20.19 13.54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.20.19 13.54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.20.19 13.54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.20.19 13.54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.20.19 13.54	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.20.19 13.54	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.20.19 13.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	114	%	70-130	07.20.19 13.54		
4-Bromofluorobenzene	460-00-4	97	%	70-130	07.20.19 13.54		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH07** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630871-013 Date Collected: 07.10.19 12.50 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 10.10 Basis: Wet Weight
 Seq Number: 3095674 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.6	4.96	mg/kg	07.17.19 13.22		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.22.19 09.00 Basis: Wet Weight
 Seq Number: 3096145 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 17.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	404	15.0	mg/kg	07.22.19 17.48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	50.3	15.0	mg/kg	07.22.19 17.48		1
Total TPH	PHC635	454	15.0	mg/kg	07.22.19 17.48		1
Total GRO-DRO	PHC628	404	15.0	mg/kg	07.22.19 17.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	07.22.19 17.48	
o-Terphenyl	84-15-1	81	%	70-135	07.22.19 17.48	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH07**
Lab Sample Id: 630871-013

Matrix: Soil
Date Collected: 07.10.19 12.50

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.20.19 01.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.20.19 01.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.20.19 01.15	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.20.19 01.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.20.19 01.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.20.19 01.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.20.19 01.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	07.20.19 01.15		
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.20.19 01.15		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH07A**
Lab Sample Id: 630871-014

Matrix: Soil
Date Collected: 07.10.19 13.00

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.5	5.00	mg/kg	07.17.19 22.45		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 18.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 18.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 18.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 18.13	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 18.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	07.22.19 18.13	
o-Terphenyl	84-15-1	101	%	70-135	07.22.19 18.13	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH07A**
Lab Sample Id: 630871-014

Matrix: Soil
Date Collected: 07.10.19 13.00

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.20.19 14.15	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.20.19 14.15	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.20.19 14.15	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.20.19 14.15	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.20.19 14.15	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.20.19 14.15	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.20.19 14.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	07.20.19 14.15		
4-Bromofluorobenzene	460-00-4	92	%	70-130	07.20.19 14.15		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH08**
Lab Sample Id: 630871-015

Matrix: Soil
Date Collected: 07.11.19 10.50

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.05	5.05	mg/kg	07.17.19 14.02	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.22.19 18.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.22.19 18.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.22.19 18.38	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.22.19 18.38	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.22.19 18.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	07.22.19 18.38	
o-Terphenyl	84-15-1	86	%	70-135	07.22.19 18.38	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH08**
Lab Sample Id: 630871-015

Matrix: Soil
Date Collected: 07.11.19 10.50

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.20.19 01.55	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.20.19 01.55	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.20.19 01.55	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.20.19 01.55	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.20.19 01.55	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.20.19 01.55	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.20.19 01.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.20.19 01.55		
4-Bromofluorobenzene	460-00-4	96	%	70-130	07.20.19 01.55		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH08A**
Lab Sample Id: 630871-016

Matrix: Soil
Date Collected: 07.11.19 10.55

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	435	4.98	mg/kg	07.17.19 14.12		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 19.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 19.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 19.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 19.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 19.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	07.22.19 19.02	
o-Terphenyl	84-15-1	91	%	70-135	07.22.19 19.02	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH08A**
Lab Sample Id: 630871-016

Matrix: Soil
Date Collected: 07.11.19 10.55

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.20.19 02.15	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.20.19 02.15	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.20.19 02.15	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.20.19 02.15	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.20.19 02.15	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.20.19 02.15	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.20.19 02.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	07.20.19 02.15		
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.20.19 02.15		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH09**
Lab Sample Id: 630871-017

Matrix: Soil
Date Collected: 07.11.19 11.05

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	186	5.00	mg/kg	07.17.19 14.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 19.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 19.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 19.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 19.27	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 19.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	07.22.19 19.27	
o-Terphenyl	84-15-1	100	%	70-135	07.22.19 19.27	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH09**
Lab Sample Id: 630871-017

Matrix: Soil
Date Collected: 07.11.19 11.05

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.20.19 02.35	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.20.19 02.35	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.20.19 02.35	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.20.19 02.35	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.20.19 02.35	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.20.19 02.35	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.20.19 02.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	07.20.19 02.35		
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.20.19 02.35		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH09A** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630871-018 Date Collected: 07.11.19 11.15 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 10.10 Basis: Wet Weight
 Seq Number: 3095674 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	161	5.03	mg/kg	07.17.19 14.32		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.22.19 09.00 Basis: Wet Weight
 Seq Number: 3096145 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 19.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 19.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 19.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 19.51	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 19.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	07.22.19 19.51	
o-Terphenyl	84-15-1	107	%	70-135	07.22.19 19.51	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH09A**
Lab Sample Id: 630871-018

Matrix: Soil
Date Collected: 07.11.19 11.15

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.20.19 02.55	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.20.19 02.55	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.20.19 02.55	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.20.19 02.55	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.20.19 02.55	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.20.19 02.55	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.20.19 02.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	07.20.19 02.55		
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.20.19 02.55		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH10**
Lab Sample Id: 630871-019

Matrix: Soil
Date Collected: 07.11.19 11.35

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.8	5.01	mg/kg	07.17.19 14.41		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 20.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 20.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 20.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 20.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 20.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	07.22.19 20.15	
o-Terphenyl	84-15-1	83	%	70-135	07.22.19 20.15	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH10**
Lab Sample Id: 630871-019

Matrix: Soil
Date Collected: 07.11.19 11.35

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.20.19 03.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.20.19 03.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.20.19 03.15	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.20.19 03.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.20.19 03.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.20.19 03.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.20.19 03.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.20.19 03.15		
4-Bromofluorobenzene	460-00-4	93	%	70-130	07.20.19 03.15		



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH10A**
Lab Sample Id: 630871-020

Matrix: Soil
Date Collected: 07.11.19 11.50

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095674

Date Prep: 07.17.19 10.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.9	4.98	mg/kg	07.17.19 14.56		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096145

Date Prep: 07.22.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.22.19 20.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.22.19 20.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.22.19 20.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.22.19 20.40	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.22.19 20.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	07.22.19 20.40	
o-Terphenyl	84-15-1	96	%	70-135	07.22.19 20.40	



Certificate of Analytical Results 630871

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH10A**
Lab Sample Id: 630871-020

Matrix: Soil
Date Collected: 07.11.19 11.50

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095965

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 13.37

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.20.19 03.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.20.19 03.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.20.19 03.35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.20.19 03.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.20.19 03.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.20.19 03.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.20.19 03.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	07.20.19 03.35		
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.20.19 03.35		



Flagging Criteria

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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU 184

Analytical Method: Chloride by EPA 300

Seq Number: 3095586

MB Sample Id: 7682179-1-BLK

Matrix: Solid

LCS Sample Id: 7682179-1-BKS

Prep Method: E300P

Date Prep: 07.17.19

LCSD Sample Id: 7682179-1-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	242	97	240	96	90-110	1	20	mg/kg	07.17.19 08:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3095674

MB Sample Id: 7682180-1-BLK

Matrix: Solid

LCS Sample Id: 7682180-1-BKS

Prep Method: E300P

Date Prep: 07.17.19

LCSD Sample Id: 7682180-1-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	236	94	235	94	90-110	0	20	mg/kg	07.17.19 10:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3095727

MB Sample Id: 7682182-1-BLK

Matrix: Solid

LCS Sample Id: 7682182-1-BKS

Prep Method: E300P

Date Prep: 07.17.19

LCSD Sample Id: 7682182-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	239	96	238	95	90-110	0	20	mg/kg	07.17.19 11:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3095586

Parent Sample Id: 630866-002

Matrix: Soil

MS Sample Id: 630866-002 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 630866-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	80.0	250	312	93	318	95	90-110	2	20	mg/kg	07.17.19 10:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3095586

Parent Sample Id: 631001-001

Matrix: Soil

MS Sample Id: 631001-001 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 631001-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.74	253	257	99	257	99	90-110	0	20	mg/kg	07.17.19 08:53	

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

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

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

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



LT Environmental, Inc.

PLU 184

Analytical Method: Chloride by EPA 300

Seq Number: 3095674

Parent Sample Id: 630319-004

Matrix: Soil

MS Sample Id: 630319-004 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 630319-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	369	248	591	90	592	90	90-110	0	20	mg/kg	07.17.19 11:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3095674

Parent Sample Id: 630871-011

Matrix: Soil

MS Sample Id: 630871-011 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 630871-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	38.0	251	287	99	287	99	90-110	0	20	mg/kg	07.17.19 13:00	

Analytical Method: Chloride by EPA 300

Seq Number: 3095727

Parent Sample Id: 630873-021

Matrix: Soil

MS Sample Id: 630873-021 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 630873-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	377	250	603	90	601	90	90-110	0	20	mg/kg	07.17.19 11:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3095727

Parent Sample Id: 631030-005

Matrix: Soil

MS Sample Id: 631030-005 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 631030-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	35.8	251	284	99	285	99	90-110	0	20	mg/kg	07.17.19 12:46	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3096145

MB Sample Id: 7682553-1-BLK

Matrix: Solid

LCS Sample Id: 7682553-1-BKS

Prep Method: TX1005P

Date Prep: 07.22.19

LCSD Sample Id: 7682553-1-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	1040	104	1020	102	70-135	2	20	mg/kg	07.22.19 10:47	
Diesel Range Organics (DRO)	<8.13	1000	1150	115	1110	111	70-135	4	20	mg/kg	07.22.19 10:47	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	90		96		91		70-135	%	07.22.19 10:47
o-Terphenyl	75		102		88		70-135	%	07.22.19 10:47

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

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

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

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



LT Environmental, Inc.

PLU 184

Analytical Method: TPH by SW8015 Mod

Seq Number: 3096145

Parent Sample Id: 630871-001

Matrix: Soil

MS Sample Id: 630871-001 S

Prep Method: TX1005P

Date Prep: 07.22.19

MSD Sample Id: 630871-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	1130	113	1150	115	70-135	2	20	mg/kg	07.23.19 07:49	
Diesel Range Organics (DRO)	<8.11	998	1200	120	1160	116	70-135	3	20	mg/kg	07.23.19 07:49	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		111		70-135	%	07.23.19 07:49
o-Terphenyl	123		112		70-135	%	07.23.19 07:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3095965

MB Sample Id: 7682122-1-BLK

Matrix: Solid

LCS Sample Id: 7682122-1-BKS

Prep Method: SW5030B

Date Prep: 07.16.19

LCSD Sample Id: 7682122-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.101	101	0.107	107	70-130	6	35	mg/kg	07.19.19 17:41	
Toluene	<0.000456	0.100	0.0842	84	0.0907	91	70-130	7	35	mg/kg	07.19.19 17:41	
Ethylbenzene	<0.00200	0.100	0.0772	77	0.0850	85	70-130	10	35	mg/kg	07.19.19 17:41	
m,p-Xylenes	<0.00400	0.200	0.153	77	0.170	85	70-130	11	35	mg/kg	07.19.19 17:41	
o-Xylene	<0.00200	0.100	0.0772	77	0.0850	85	70-130	10	35	mg/kg	07.19.19 17:41	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		112		112		70-130	%	07.19.19 17:41
4-Bromofluorobenzene	86		86		90		70-130	%	07.19.19 17:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3095965

Parent Sample Id: 630871-001

Matrix: Soil

MS Sample Id: 630871-001 S

Prep Method: SW5030B

Date Prep: 07.16.19

MSD Sample Id: 630871-001 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	0.111	111	0.115	115	70-130	4	35	mg/kg	07.20.19 11:34	
Toluene	<0.000454	0.0996	0.0907	91	0.0931	93	70-130	3	35	mg/kg	07.20.19 11:34	
Ethylbenzene	<0.00199	0.0996	0.0843	85	0.0865	87	70-130	3	35	mg/kg	07.20.19 11:34	
m,p-Xylenes	<0.00101	0.199	0.168	84	0.173	87	70-130	3	35	mg/kg	07.20.19 11:34	
o-Xylene	<0.00199	0.0996	0.0816	82	0.0846	85	70-130	4	35	mg/kg	07.20.19 11:34	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	116		116		70-130	%	07.20.19 11:34
4-Bromofluorobenzene	90		89		70-130	%	07.20.19 11:34

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:

630871

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

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Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	bbellill@ltenv.com

Project Name:	PLU 184 (2AP-3014)	Turn Around	Routine ☒ Rush: ☐
Project Number:	012918039	Due Date:	
P.O. Number:			
Sampler's Name:	Benjamin Bellill		

Temperature (°C):	20	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Received Intact:	Yes ☒ No ☐	Thermometer ID	TMM007		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:	-0.2		
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	20		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST										Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)							
PH01	S	7/10/19	1030	2'	1	X	X	X							
PH01A			1045	6'	1	X	X	X							
PH02			1100	2'	1	X	X	X							
PH02A			1110	4'	1	X	X	X							
PH03			1120	2'	1	X	X	X							
PH03A			1125	4'	1	X	X	X							
PH04			1140	2'	1	X	X	X							
PH04A			1150	4'	1	X	X	X							
PH05			1200	2'	1	X	X	X							
PH05A			1220	6'	1	X	X	X							

Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 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 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 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>	07/10/19 11:00	<i>[Signature]</i>	<i>[Signature]</i>	07/10/19 11:55

Work Order No: 63087

Page of

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

[illegible]

Number of Containers	
A 8015)	
PA 0=8021)	
(EPA 300.0)	
TAT starts the day received by the	

[illegible]

8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mn	M	Ni	W	V	Zn	Ag	Se	Si	Na	K	Mo	Li	Sn	Te	Bi	P	Br	I	Th	U	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr	Ce	La	Y	Sc	Ti	Zr	Hf	Nb	Ta	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Pb	Bi	Po	At	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Pr
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1631 / 245.1 / 7470 / 7471 : Hg

service, Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		07/12/11 11:00			07/12/11 11:55

Inter-Office Shipment

IOS Number **43428**

Date/Time: 07/15/19 13:24

Created by: Martha Castro

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 814694170350

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630871-001	S	PH01	07/10/19 10:30	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-001	S	PH01	07/10/19 10:30	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-001	S	PH01	07/10/19 10:30	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-002	S	PH01A	07/10/19 10:45	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-002	S	PH01A	07/10/19 10:45	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-002	S	PH01A	07/10/19 10:45	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-003	S	PH02	07/10/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-003	S	PH02	07/10/19 11:00	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-003	S	PH02	07/10/19 11:00	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-004	S	PH02A	07/10/19 11:10	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-004	S	PH02A	07/10/19 11:10	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-004	S	PH02A	07/10/19 11:10	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-005	S	PH03	07/10/19 11:20	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-005	S	PH03	07/10/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-005	S	PH03	07/10/19 11:20	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-006	S	PH03A	07/10/19 11:25	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-006	S	PH03A	07/10/19 11:25	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-006	S	PH03A	07/10/19 11:25	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-007	S	PH04	07/10/19 11:40	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-007	S	PH04	07/10/19 11:40	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-007	S	PH04	07/10/19 11:40	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-008	S	PH04A	07/10/19 11:50	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-008	S	PH04A	07/10/19 11:50	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-008	S	PH04A	07/10/19 11:50	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-009	S	PH05	07/10/19 12:00	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	



Inter-Office Shipment

Page 2 of 3

IOS Number **43428**

Date/Time: 07/15/19 13:24

Created by: Martha Castro

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 814694170350

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630871-009	S	PH05	07/10/19 12:00	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-009	S	PH05	07/10/19 12:00	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-010	S	PH05A	07/10/19 12:20	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-010	S	PH05A	07/10/19 12:20	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-010	S	PH05A	07/10/19 12:20	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-011	S	PH06	07/10/19 12:30	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-011	S	PH06	07/10/19 12:30	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-011	S	PH06	07/10/19 12:30	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-012	S	PH06A	07/10/19 12:40	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-012	S	PH06A	07/10/19 12:40	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-012	S	PH06A	07/10/19 12:40	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-013	S	PH07	07/10/19 12:50	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-013	S	PH07	07/10/19 12:50	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-013	S	PH07	07/10/19 12:50	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-014	S	PH07A	07/10/19 13:00	SW8021B	BTEX by EPA 8021B	07/19/19	07/24/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-014	S	PH07A	07/10/19 13:00	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/24/19	JKR	GRO-DRO PHCC10C28 PF	
630871-014	S	PH07A	07/10/19 13:00	E300_CL	Chloride by EPA 300	07/19/19	01/06/20	JKR	CL	
630871-015	S	PH08	07/11/19 10:50	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630871-015	S	PH08	07/11/19 10:50	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-015	S	PH08	07/11/19 10:50	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630871-016	S	PH08A	07/11/19 10:55	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630871-016	S	PH08A	07/11/19 10:55	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630871-016	S	PH08A	07/11/19 10:55	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-017	S	PH09	07/11/19 11:05	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630871-017	S	PH09	07/11/19 11:05	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	

Inter Office Shipment or Sample Comments:



Inter-Office Shipment

Page 3 of 3

IOS Number **43428**

Date/Time: 07/15/19 13:24

Created by: Martha Castro

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 814694170350

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630871-017	S	PH09	07/11/19 11:05	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-018	S	PH09A	07/11/19 11:15	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-018	S	PH09A	07/11/19 11:15	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PI	
630871-018	S	PH09A	07/11/19 11:15	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630871-019	S	PH10	07/11/19 11:35	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PI	
630871-019	S	PH10	07/11/19 11:35	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630871-019	S	PH10	07/11/19 11:35	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-020	S	PH10A	07/11/19 11:50	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630871-020	S	PH10A	07/11/19 11:50	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630871-020	S	PH10A	07/11/19 11:50	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PI	

Inter Office Shipment or Sample Comments:

Relinquished By:

Date Relinquished:

Martha Castro

07/15/2019

Received By:

Date Received:

Brianna Teel

Cooler Temperature:

07/16/2019 13:06

0.3



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 43428

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Martha Castro

Date Sent: 07/15/2019 01:24 PM

Received By: Brianna Teel

Date Received: 07/16/2019 01:06 PM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 07/16/2019



Client: LT Environmental, Inc.

Date/ Time Received: 07/15/2019 11:55:00 AM

Work Order #: 630871

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T NM 007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Martha Castro

Date: 07/15/2019

Checklist reviewed by:

Jessica Kramer

Date: 07/16/2019

Analytical Report 575573

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

15-FEB-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

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

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



15-FEB-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **575573**

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

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) 575573. 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. 575573 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

Odessa Laboratory Director

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 575573****LT Environmental, Inc., Arvada, CO**

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	02-06-18 14:50		575573-001
SS2	S	02-06-18 14:52	6"	575573-002
SS3	S	02-06-18 14:54	6"	575573-003
SS4	S	02-06-18 14:55	6"	575573-004
SS5	S	02-06-18 14:57	6"	575573-005
SS6	S	02-06-18 14:58		575573-006
SS7	S	02-06-18 14:59		575573-007
SS8	S	02-06-18 15:02	6"	575573-008
SS9	S	02-06-18 15:03	6"	575573-009



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Project ID:

Work Order Number(s): 575573

Report Date: 15-FEB-18

Date Received: 02/07/2018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3040520 BTEX by EPA 8021B

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

Batch: LBA-3040647 BTEX by EPA 8021B

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

Batch: LBA-3040738 BTEX by EPA 8021B

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



Certificate of Analysis Summary 575573

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Wed Feb-07-18 08:00 am

Report Date: 15-FEB-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	575573-001	575573-002	575573-003	575573-004	575573-005	575573-006
	<i>Field Id:</i>	SS1	SS2	SS3	SS4	SS5	SS6
	<i>Depth:</i>		6"-	6"-	6"-	6"-	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-06-18 14:50	Feb-06-18 14:52	Feb-06-18 14:54	Feb-06-18 14:55	Feb-06-18 14:57	Feb-06-18 14:58
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-07-18 13:00	Feb-07-18 13:00	Feb-07-18 13:00	Feb-08-18 08:45	Feb-07-18 13:00	Feb-07-18 13:00
	<i>Analyzed:</i>	Feb-07-18 17:44	Feb-07-18 20:15	Feb-07-18 20:34	Feb-12-18 12:11	Feb-07-18 21:12	Feb-07-18 21:31
	<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	<0.00199 0.00199	<0.00200 0.00200	<0.00375 0.00375	<0.00199 0.00199	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00375 0.00375	<0.00199 0.00199	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00375 0.00375	<0.00199 0.00199	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399	<0.00749 0.00749	<0.00398 0.00398	<0.00397 0.00397
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00375 0.00375	<0.00199 0.00199	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00375 0.00375	<0.00199 0.00199	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00375 0.00375	<0.00199 0.00199	<0.00198 0.00198
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-12-18 17:00	Feb-13-18 09:30	Feb-13-18 09:30	Feb-13-18 14:10	Feb-13-18 14:10	Feb-13-18 14:10
	<i>Analyzed:</i>	Feb-13-18 01:40	Feb-13-18 11:32	Feb-13-18 11:53	Feb-13-18 15:28	Feb-13-18 15:35	Feb-13-18 15:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		16100 998	<4.95 4.95	12.2 4.96	1230 24.9	5.40 4.96	92.0 4.92
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-08-18 07:00	Feb-08-18 07:00	Feb-08-18 07:00	Feb-08-18 07:00	Feb-08-18 07:00	Feb-08-18 07:00
	<i>Analyzed:</i>	Feb-08-18 16:23	Feb-08-18 16:43	Feb-08-18 17:03	Feb-08-18 17:24	Feb-08-18 17:43	Feb-08-18 15:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<74.9 74.9
Diesel Range Organics (DRO)		498 15.0	<15.0 15.0	59.2 14.9	25.0 15.0	39.1 15.0	3240 74.9
Oil Range Hydrocarbons (ORO)		110 15.0	<15.0 15.0	22.5 14.9	<15.0 15.0	<15.0 15.0	796 74.9
Total TPH		608 15.0	<15.0 15.0	81.7 14.9	25.0 15.0	39.1 15.0	4040 74.9

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
Odessa Laboratory Director



Certificate of Analysis Summary 575573

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Wed Feb-07-18 08:00 am

Report Date: 15-FEB-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	575573-007	575573-008	575573-009			
	Field Id:	SS7	SS8	SS9			
	Depth:	6"	6"	6"			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Feb-06-18 14:59	Feb-06-18 15:02	Feb-06-18 15:03			
BTEX by EPA 8021B	Extracted:	Feb-07-18 14:10	Feb-07-18 14:10	Feb-07-18 14:10			
	Analyzed:	Feb-08-18 01:21	Feb-08-18 01:38	Feb-08-18 01:57			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200			
Toluene		<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200			
Ethylbenzene		<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200			
m,p-Xylenes		<0.00398 0.00398	<0.00403 0.00403	<0.00401 0.00401			
o-Xylene		<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200			
Total Xylenes		<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200			
Total BTEX		<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200			
Inorganic Anions by EPA 300	Extracted:	Feb-13-18 14:10	Feb-13-18 14:10	Feb-13-18 14:10			
	Analyzed:	Feb-13-18 15:48	Feb-13-18 15:55	Feb-13-18 16:02			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		19100 247	68.8 4.93	53.1 4.93			
TPH by SW8015 Mod	Extracted:	Feb-08-18 07:00	Feb-08-18 07:00	Feb-08-18 07:00			
	Analyzed:	Feb-08-18 15:21	Feb-08-18 15:41	Feb-08-18 16:03			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Diesel Range Organics (DRO)		926 15.0	<15.0 15.0	78.4 15.0			
Oil Range Hydrocarbons (ORO)		168 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		1090 15.0	<15.0 15.0	78.4 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
Odessa Laboratory Director



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS1
Lab Sample Id: 575573-001

Matrix: Soil
Date Collected: 02.06.18 14.50

Date Received: 02.07.18 08.00

Analytical Method: Inorganic Anions by EPA 300

Tech: LRI

Analyst: LRI

Seq Number: 3040835

Prep Method: E300P

% Moisture:

Date Prep: 02.12.18 17.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16100	998	mg/kg	02.13.18 01.40		200

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040495

Prep Method: TX1005P

% Moisture:

Date Prep: 02.08.18 07.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.18 16.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	498	15.0	mg/kg	02.08.18 16.23		1
Oil Range Hydrocarbons (ORO)	PHCG2835	110	15.0	mg/kg	02.08.18 16.23		1
Total TPH	PHC635	608	15.0	mg/kg	02.08.18 16.23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.08.18 16.23	
o-Terphenyl	84-15-1	90	%	70-135	02.08.18 16.23	



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS1
Lab Sample Id: 575573-001

Matrix: Soil
Date Collected: 02.06.18 14.50

Date Received: 02.07.18 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.07.18 13.00

Basis: Wet Weight

Seq Number: 3040520

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.07.18 17.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.07.18 17.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.07.18 17.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.07.18 17.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.07.18 17.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.07.18 17.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.07.18 17.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	80-120	02.07.18 17.44		
1,4-Difluorobenzene	540-36-3	88	%	80-120	02.07.18 17.44		



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS2 Matrix: Soil Date Received: 02.07.18 08.00
 Lab Sample Id: 575573-002 Date Collected: 02.06.18 14.52 Sample Depth: 6"
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: LRI Date Prep: 02.13.18 09.30 Basis: Wet Weight
 Seq Number: 3040932

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	02.13.18 11.32	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.08.18 07.00 Basis: Wet Weight
 Seq Number: 3040495

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.18 16.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.18 16.43	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.08.18 16.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.18 16.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.08.18 16.43	
o-Terphenyl	84-15-1	91	%	70-135	02.08.18 16.43	



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS2
Lab Sample Id: 575573-002

Matrix: Soil
Date Collected: 02.06.18 14.52

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040520

Prep Method: SW5030B

% Moisture:

Date Prep: 02.07.18 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.07.18 20.15	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.07.18 20.15	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.07.18 20.15	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.07.18 20.15	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.07.18 20.15	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.07.18 20.15	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.07.18 20.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	80-120	02.07.18 20.15		
1,4-Difluorobenzene	540-36-3	81	%	80-120	02.07.18 20.15		



Certificate of Analytical Results 575573

LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS3 Matrix: Soil Date Received: 02.07.18 08.00
 Lab Sample Id: 575573-003 Date Collected: 02.06.18 14.54 Sample Depth: 6"
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: LRI Date Prep: 02.13.18 09.30 Basis: Wet Weight
 Seq Number: 3040932

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.2	4.96	mg/kg	02.13.18 11.53		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.08.18 07.00 Basis: Wet Weight
 Seq Number: 3040495

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.08.18 17.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	59.2	14.9	mg/kg	02.08.18 17.03		1
Oil Range Hydrocarbons (ORO)	PHCG2835	22.5	14.9	mg/kg	02.08.18 17.03		1
Total TPH	PHC635	81.7	14.9	mg/kg	02.08.18 17.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.08.18 17.03	
o-Terphenyl	84-15-1	101	%	70-135	02.08.18 17.03	



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS3
Lab Sample Id: 575573-003

Matrix: Soil
Date Collected: 02.06.18 14.54

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040520

Prep Method: SW5030B

% Moisture:

Date Prep: 02.07.18 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.07.18 20.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.07.18 20.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.07.18 20.34	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.07.18 20.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.07.18 20.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.07.18 20.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.07.18 20.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	80-120	02.07.18 20.34		
4-Bromofluorobenzene	460-00-4	97	%	80-120	02.07.18 20.34		



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS4
Lab Sample Id: 575573-004

Matrix: Soil
Date Collected: 02.06.18 14.55

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300

Tech: LRI

Analyst: LRI

Seq Number: 3040995

Prep Method: E300P

% Moisture:

Date Prep: 02.13.18 14.10

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1230	24.9	mg/kg	02.13.18 15.28		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040495

Prep Method: TX1005P

% Moisture:

Date Prep: 02.08.18 07.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.18 17.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	25.0	15.0	mg/kg	02.08.18 17.24		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.08.18 17.24	U	1
Total TPH	PHC635	25.0	15.0	mg/kg	02.08.18 17.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.08.18 17.24	
o-Terphenyl	84-15-1	91	%	70-135	02.08.18 17.24	



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS4
Lab Sample Id: 575573-004

Matrix: Soil
Date Collected: 02.06.18 14.55

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040738

Prep Method: SW5030B

% Moisture:

Date Prep: 02.08.18 08.45

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00375	0.00375	mg/kg	02.12.18 12.11	U	1
Toluene	108-88-3	<0.00375	0.00375	mg/kg	02.12.18 12.11	U	1
Ethylbenzene	100-41-4	<0.00375	0.00375	mg/kg	02.12.18 12.11	U	1
m,p-Xylenes	179601-23-1	<0.00749	0.00749	mg/kg	02.12.18 12.11	U	1
o-Xylene	95-47-6	<0.00375	0.00375	mg/kg	02.12.18 12.11	U	1
Total Xylenes	1330-20-7	<0.00375	0.00375	mg/kg	02.12.18 12.11	U	1
Total BTEX		<0.00375	0.00375	mg/kg	02.12.18 12.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	80-120	02.12.18 12.11		
1,4-Difluorobenzene	540-36-3	90	%	80-120	02.12.18 12.11		



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS5 Matrix: Soil Date Received: 02.07.18 08.00
 Lab Sample Id: 575573-005 Date Collected: 02.06.18 14.57 Sample Depth: 6"
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: LRI Date Prep: 02.13.18 14.10 Basis: Wet Weight
 Seq Number: 3040995

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.40	4.96	mg/kg	02.13.18 15.35		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.08.18 07.00 Basis: Wet Weight
 Seq Number: 3040495

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.18 17.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	39.1	15.0	mg/kg	02.08.18 17.43		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.08.18 17.43	U	1
Total TPH	PHC635	39.1	15.0	mg/kg	02.08.18 17.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	02.08.18 17.43	
o-Terphenyl	84-15-1	103	%	70-135	02.08.18 17.43	



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS5
Lab Sample Id: 575573-005

Matrix: Soil
Date Collected: 02.06.18 14.57

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040520

Prep Method: SW5030B

% Moisture:

Date Prep: 02.07.18 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.07.18 21.12	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.07.18 21.12	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.07.18 21.12	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.07.18 21.12	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.07.18 21.12	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.07.18 21.12	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.07.18 21.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	87	%	80-120	02.07.18 21.12		
4-Bromofluorobenzene	460-00-4	94	%	80-120	02.07.18 21.12		



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS6
Lab Sample Id: 575573-006

Matrix: Soil
Date Collected: 02.06.18 14.58

Date Received: 02.07.18 08.00

Analytical Method: Inorganic Anions by EPA 300

Tech: LRI

Analyst: LRI

Seq Number: 3040995

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 02.13.18 14.10

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	92.0	4.92	mg/kg	02.13.18 15.41		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040495

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 02.08.18 07.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<74.9	74.9	mg/kg	02.08.18 15.00	U	5
Diesel Range Organics (DRO)	C10C28DRO	3240	74.9	mg/kg	02.08.18 15.00		5
Oil Range Hydrocarbons (ORO)	PHCG2835	796	74.9	mg/kg	02.08.18 15.00		5
Total TPH	PHC635	4040	74.9	mg/kg	02.08.18 15.00		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.08.18 15.00	
o-Terphenyl	84-15-1	93	%	70-135	02.08.18 15.00	



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS6
Lab Sample Id: 575573-006

Matrix: Soil
Date Collected: 02.06.18 14.58

Date Received: 02.07.18 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.07.18 13.00

Basis: Wet Weight

Seq Number: 3040520

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.07.18 21.31	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.07.18 21.31	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.07.18 21.31	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.07.18 21.31	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.07.18 21.31	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.07.18 21.31	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.07.18 21.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	80-120	02.07.18 21.31		
1,4-Difluorobenzene	540-36-3	94	%	80-120	02.07.18 21.31		



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS7
Lab Sample Id: 575573-007

Matrix: Soil
Date Collected: 02.06.18 14.59

Date Received: 02.07.18 08.00

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: LRI

Date Prep: 02.13.18 14.10

Basis: Wet Weight

Seq Number: 3040995

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19100	247	mg/kg	02.13.18 15.48		50

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 02.08.18 07.00

Basis: Wet Weight

Seq Number: 3040495

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.18 15.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	926	15.0	mg/kg	02.08.18 15.21		1
Oil Range Hydrocarbons (ORO)	PHCG2835	168	15.0	mg/kg	02.08.18 15.21		1
Total TPH	PHC635	1090	15.0	mg/kg	02.08.18 15.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.08.18 15.21	
o-Terphenyl	84-15-1	119	%	70-135	02.08.18 15.21	



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS7
Lab Sample Id: 575573-007

Matrix: Soil
Date Collected: 02.06.18 14.59

Date Received: 02.07.18 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.07.18 14.10

Basis: Wet Weight

Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.08.18 01.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.08.18 01.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.08.18 01.21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.08.18 01.21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.08.18 01.21	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.08.18 01.21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.08.18 01.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	80-120	02.08.18 01.21		
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.08.18 01.21		



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: **SS8**
Lab Sample Id: 575573-008

Matrix: Soil
Date Collected: 02.06.18 15.02

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300

Tech: LRI

Analyst: LRI

Seq Number: 3040995

Date Prep: 02.13.18 14.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	68.8	4.93	mg/kg	02.13.18 15.55		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040495

Date Prep: 02.08.18 07.00

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	02.08.18 15.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.18 15.41	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.08.18 15.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.18 15.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.08.18 15.41	
o-Terphenyl	84-15-1	100	%	70-135	02.08.18 15.41	



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: **SS8**
Lab Sample Id: 575573-008

Matrix: Soil
Date Collected: 02.06.18 15.02

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040647

Date Prep: 02.07.18 14.10

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	02.08.18 01.38	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.08.18 01.38	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.08.18 01.38	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.08.18 01.38	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.08.18 01.38	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.08.18 01.38	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.08.18 01.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.08.18 01.38		
4-Bromofluorobenzene	460-00-4	100	%	80-120	02.08.18 01.38		



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: **SS9** Matrix: **Soil** Date Received: 02.07.18 08.00
 Lab Sample Id: 575573-009 Date Collected: 02.06.18 15.03 Sample Depth: 6"
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: **LRI** % Moisture:
 Analyst: **LRI** Date Prep: 02.13.18 14.10 Basis: **Wet Weight**
 Seq Number: 3040995

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	53.1	4.93	mg/kg	02.13.18 16.02		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: **ARM** % Moisture:
 Analyst: **ARM** Date Prep: 02.08.18 07.00 Basis: **Wet Weight**
 Seq Number: 3040495

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.18 16.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	78.4	15.0	mg/kg	02.08.18 16.03		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.08.18 16.03	U	1
Total TPH	PHC635	78.4	15.0	mg/kg	02.08.18 16.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.08.18 16.03	
o-Terphenyl	84-15-1	94	%	70-135	02.08.18 16.03	



Certificate of Analytical Results 575573



LT Environmental, Inc., Arvada, CO

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Sample Id: SS9
Lab Sample Id: 575573-009

Matrix: Soil
Date Collected: 02.06.18 15.03

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040647

Date Prep: 02.07.18 14.10

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	02.08.18 01.57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.08.18 01.57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.08.18 01.57	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.08.18 01.57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.08.18 01.57	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.08.18 01.57	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.08.18 01.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	80-120	02.08.18 01.57		
1,4-Difluorobenzene	540-36-3	91	%	80-120	02.08.18 01.57		



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

+ NELAC certification not offered for this compound.

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

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LT Environmental, Inc.
 PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040835

MB Sample Id: 7638978-1-BLK

Matrix: Solid

LCS Sample Id: 7638978-1-BKS

Prep Method: E300P

Date Prep: 02.12.18

LCSD Sample Id: 7638978-1-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	272	109	265	106	90-110	3	20	mg/kg	02.12.18 22:18	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040932

MB Sample Id: 7639028-1-BLK

Matrix: Solid

LCS Sample Id: 7639028-1-BKS

Prep Method: E300P

Date Prep: 02.13.18

LCSD Sample Id: 7639028-1-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	268	107	90-110	2	20	mg/kg	02.13.18 09:36	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040995

MB Sample Id: 7639030-1-BLK

Matrix: Solid

LCS Sample Id: 7639030-1-BKS

Prep Method: E300P

Date Prep: 02.13.18

LCSD Sample Id: 7639030-1-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	276	110	271	108	90-110	2	20	mg/kg	02.13.18 14:11	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040835

Parent Sample Id: 575484-017

Matrix: Soil

MS Sample Id: 575484-017 S

Prep Method: E300P

Date Prep: 02.12.18

MSD Sample Id: 575484-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1340	250	1590	100	1590	100	90-110	0	20	mg/kg	02.13.18 00:17	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040835

Parent Sample Id: 575484-018

Matrix: Soil

MS Sample Id: 575484-018 S

Prep Method: E300P

Date Prep: 02.12.18

MSD Sample Id: 575484-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	743	249	970	91	965	89	90-110	1	20	mg/kg	02.12.18 22:39	X

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

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

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

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



LT Environmental, Inc.
 PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040932

Parent Sample Id: 575556-001

Matrix: Soil

MS Sample Id: 575556-001 S

Prep Method: E300P

Date Prep: 02.13.18

MSD Sample Id: 575556-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	790	250	1000	84	1030	96	90-110	3	20	mg/kg	02.13.18 10:01	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040932

Parent Sample Id: 575573-002

Matrix: Soil

MS Sample Id: 575573-002 S

Prep Method: E300P

Date Prep: 02.13.18

MSD Sample Id: 575573-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.95	248	267	108	261	105	90-110	2	20	mg/kg	02.13.18 11:39	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040995

Parent Sample Id: 574144-009

Matrix: Soil

MS Sample Id: 574144-009 S

Prep Method: E300P

Date Prep: 02.13.18

MSD Sample Id: 574144-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	317	250	570	101	560	97	90-110	2	20	mg/kg	02.13.18 14:32	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040995

Parent Sample Id: 575573-009

Matrix: Soil

MS Sample Id: 575573-009 S

Prep Method: E300P

Date Prep: 02.13.18

MSD Sample Id: 575573-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	53.1	247	322	109	321	108	90-110	0	20	mg/kg	02.13.18 16:09	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3040495

MB Sample Id: 7638782-1-BLK

Matrix: Solid

LCS Sample Id: 7638782-1-BKS

Prep Method: TX1005P

Date Prep: 02.08.18

LCSD Sample Id: 7638782-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1030	103	838	84	70-135	21	35	mg/kg	02.08.18 09:35	
Diesel Range Organics (DRO)	<15.0	1000	1140	114	948	95	70-135	18	35	mg/kg	02.08.18 09:35	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		116		94		70-135	%	02.08.18 09:35
o-Terphenyl	101		113		95		70-135	%	02.08.18 09:35

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

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

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

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



LT Environmental, Inc.
 PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Analytical Method: TPH by SW8015 Mod

Seq Number: 3040495

Parent Sample Id: 575572-001

Matrix: Soil

MS Sample Id: 575572-001 S

Prep Method: TX1005P

Date Prep: 02.08.18

MSD Sample Id: 575572-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	822	82	832	83	70-135	1	35	mg/kg	02.08.18 10:36	
Diesel Range Organics (DRO)	<15.0	999	966	97	965	97	70-135	0	35	mg/kg	02.08.18 10:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		95		70-135	%	02.08.18 10:36
o-Terphenyl	85		85		70-135	%	02.08.18 10:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040520

MB Sample Id: 7638795-1-BLK

Matrix: Solid

LCS Sample Id: 7638795-1-BKS

Prep Method: SW5030B

Date Prep: 02.07.18

LCSD Sample Id: 7638795-1-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	0.0796	79	0.0720	72	70-130	10	35	mg/kg	02.07.18 13:11	
Toluene	<0.00202	0.101	0.0844	84	0.0770	77	70-130	9	35	mg/kg	02.07.18 13:11	
Ethylbenzene	<0.00202	0.101	0.0969	96	0.0888	89	71-129	9	35	mg/kg	02.07.18 13:11	
m,p-Xylenes	<0.00404	0.202	0.191	95	0.175	87	70-135	9	35	mg/kg	02.07.18 13:11	
o-Xylene	<0.00202	0.101	0.0949	94	0.0891	89	71-133	6	35	mg/kg	02.07.18 13:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		94		91		80-120	%	02.07.18 13:11
4-Bromofluorobenzene	101		108		114		80-120	%	02.07.18 13:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040647

MB Sample Id: 7638867-1-BLK

Matrix: Solid

LCS Sample Id: 7638867-1-BKS

Prep Method: SW5030B

Date Prep: 02.07.18

LCSD Sample Id: 7638867-1-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	0.0789	78	0.0706	71	70-130	11	35	mg/kg	02.07.18 23:07	
Toluene	<0.00202	0.101	0.0831	82	0.0737	74	70-130	12	35	mg/kg	02.07.18 23:07	
Ethylbenzene	<0.00202	0.101	0.0937	93	0.0851	85	71-129	10	35	mg/kg	02.07.18 23:07	
m,p-Xylenes	<0.00403	0.202	0.184	91	0.168	84	70-135	9	35	mg/kg	02.07.18 23:07	
o-Xylene	<0.00202	0.101	0.0921	91	0.0858	86	71-133	7	35	mg/kg	02.07.18 23:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		90		90		80-120	%	02.07.18 23:07
4-Bromofluorobenzene	102		102		112		80-120	%	02.07.18 23:07

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

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

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

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



LT Environmental, Inc.
PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040738

MB Sample Id: 7638875-1-BLK

Matrix: Solid

LCS Sample Id: 7638875-1-BKS

Prep Method: SW5030B

Date Prep: 02.08.18

LCSD Sample Id: 7638875-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0821	83	0.0760	76	70-130	8	35	mg/kg	02.12.18 12:11	
Toluene	<0.00199	0.0994	0.0844	85	0.0813	81	70-130	4	35	mg/kg	02.12.18 12:11	
Ethylbenzene	<0.00199	0.0994	0.0895	90	0.0861	86	71-129	4	35	mg/kg	02.12.18 12:11	
m,p-Xylenes	<0.00398	0.199	0.174	87	0.167	84	70-135	4	35	mg/kg	02.12.18 12:11	
o-Xylene	<0.00199	0.0994	0.0884	89	0.0855	86	71-133	3	35	mg/kg	02.12.18 12:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		95		93		80-120	%	02.12.18 12:11
4-Bromofluorobenzene	98		102		99		80-120	%	02.12.18 12:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040520

Parent Sample Id: 575522-001

Matrix: Soil

MS Sample Id: 575522-001 S

Prep Method: SW5030B

Date Prep: 02.07.18

MSD Sample Id: 575522-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00395	0.198	0.0511	26	0.0473	48	70-130	8	35	mg/kg	02.07.18 13:49	X
Toluene	<0.00395	0.198	0.0450	23	0.0411	41	70-130	9	35	mg/kg	02.07.18 13:49	X
Ethylbenzene	<0.00395	0.198	0.0434	22	0.0381	38	71-129	13	35	mg/kg	02.07.18 13:49	X
m,p-Xylenes	<0.00791	0.395	0.0849	21	0.0716	36	70-135	17	35	mg/kg	02.07.18 13:49	X
o-Xylene	<0.00395	0.198	0.0441	22	0.0380	38	71-133	15	35	mg/kg	02.07.18 13:49	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		83		80-120	%	02.07.18 13:49
4-Bromofluorobenzene	115		111		80-120	%	02.07.18 13:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040647

Parent Sample Id: 575577-001

Matrix: Soil

MS Sample Id: 575577-001 S

Prep Method: SW5030B

Date Prep: 02.07.18

MSD Sample Id: 575577-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0703	70	0.0632	63	70-130	11	35	mg/kg	02.07.18 23:45	X
Toluene	<0.00200	0.0998	0.0700	70	0.0624	62	70-130	11	35	mg/kg	02.07.18 23:45	X
Ethylbenzene	<0.00200	0.0998	0.0719	72	0.0618	62	71-129	15	35	mg/kg	02.07.18 23:45	X
m,p-Xylenes	<0.00399	0.200	0.139	70	0.119	59	70-135	16	35	mg/kg	02.07.18 23:45	X
o-Xylene	<0.00200	0.0998	0.0724	73	0.0629	63	71-133	14	35	mg/kg	02.07.18 23:45	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		87		80-120	%	02.07.18 23:45
4-Bromofluorobenzene	106		99		80-120	%	02.07.18 23:45

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

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

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

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



LT Environmental, Inc.

PLU 184 2RP-4397, 2RP-4396, 2RP-3014

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040738

Parent Sample Id: 575578-002

Matrix: Soil

MS Sample Id: 575578-002 S

Prep Method: SW5030B

Date Prep: 02.08.18

MSD Sample Id: 575578-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.103	102	0.125	125	70-130	19	35	mg/kg	02.12.18 12:11	
Toluene	<0.00202	0.101	0.0648	64	0.0677	68	70-130	4	35	mg/kg	02.12.18 12:11	X
Ethylbenzene	<0.00202	0.101	0.0603	60	0.0673	67	71-129	11	35	mg/kg	02.12.18 12:11	X
m,p-Xylenes	<0.00404	0.202	0.117	58	0.131	65	70-135	11	35	mg/kg	02.12.18 12:11	X
o-Xylene	<0.00202	0.101	0.0605	60	0.0674	67	71-133	11	35	mg/kg	02.12.18 12:11	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		96		80-120	%	02.12.18 12:11
4-Bromofluorobenzene	106		100		80-120	%	02.12.18 12:11

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

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

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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Revision 2016.1

CHAIN OF CUSTODY

Page 1 of 1

Client / Reporting Information		Project Information		Xenoco Quote #		Xenoco Job #		Service Center- Hobbs, NM (575) 392-1550	
Company Name / Branch: WFE		Project Name/Number: PLU 164		Xenoco Quote #		Xenoco Job #		575573	
Company Address: 4300 North H St Bldg 1 #103		Project Location: Carlsbad, NM		Xenoco Job #		Xenoco Job #		575573	
Email: abaker@ten.com		Phone No: 505-432-8941		Xenoco Job #		Xenoco Job #		575573	
Project Contact: Abaker@ten.com		Invoice To: KTD Energy, Kyle Lihrell		Xenoco Job #		Xenoco Job #		575573	
Samplers Name: Phyllis Baker		PO Number: 80-015-31990		Xenoco Job #		Xenoco Job #		575573	
Field ID / Point of Collection		Collection		Number of preserved bottles		Analytical Information		Matrix Codes	
No.		Sample Depth		# of bottles		HCl		NaOH/Zn Acetate	
1		SS1		250		5		1	
2		SS2		250		5		1	
3		SS3		250		5		1	
4		SS4		250		5		1	
5		SS5		250		5		1	
6		SS6		250		5		1	
7		SS7		250		5		1	
8		SS8		250		5		1	
9		SS9		250		5		1	
10		Turnaround Time (Business days)		Data Deliverable Information		Notes:		Field Comments	
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		☐ 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		FED.		Temp: 4		IR ID: R-8	
Relinquished by Sampler: WFE		Date Time: 2/10/18 6:15		Received By: Phyllis Baker		Date Time: 2/10/18 6:15		Corrected Temp: 3.8	
Relinquished by: WFE		Date Time: 2/10/18 6:15		Received By: Phyllis Baker		Date Time: 2/10/18 6:15			
Relinquished by: WFE		Date Time: 2/10/18 6:15		Received By: Phyllis Baker		Date Time: 2/10/18 6:15			
5		Date Time: 2/10/18 6:15		Received By: Phyllis Baker		Date Time: 2/10/18 6:15			
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 liability 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.		Xenoco Quote #		Xenoco Job #		Xenoco Job #		Xenoco Job #	
Matrix Codes		W = Water		S = Soil/Sed/Solid		GW = Ground Water		DW = Drinking Water	
		P = Product		SW = Surface Water		SL = Sludge		OW = Ocean/Sea Water	
		O = Oil		W = Waste Water		A = Air			



Client: LT Environmental, Inc.

Date/ Time Received: 02/07/2018 08:00:00 AM

Work Order #: 575573

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)?	3.8
#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:

Connie Hernandez

Date: 02/07/2018

Checklist reviewed by:

Jessica Kramer

Date: 02/07/2018

Analytical Report 596448

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU-184

27-AUG-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)



27-AUG-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **596448**

PLU-184

Project Address: NM, Eddy 2RP-4396

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) 596448. 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. 596448 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 596448****LT Environmental, Inc., Arvada, CO**

PLU-184

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	08-17-18 16:50	2 ft	596448-001
SW03	S	08-17-18 16:55	2 ft	596448-002
SW04	S	08-17-18 17:00	2 ft	596448-003
FS01	S	08-17-18 17:05	4 ft	596448-004
SW02	S	08-17-18 17:10	2 ft	596448-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU-184

Project ID:

Work Order Number(s): 596448

Report Date: 27-AUG-18

Date Received: 08/21/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3061313 BTEX by EPA 8021B

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



Certificate of Analysis Summary 596448

LT Environmental, Inc., Arvada, CO

Project Name: PLU-184

Project Id:

Contact: Adrian Baker

Project Location: NM, Eddy 2RP-4396

Date Received in Lab: Tue Aug-21-18 10:35 am

Report Date: 27-AUG-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	596448-001	596448-002	596448-003	596448-004	596448-005	
	<i>Field Id:</i>	SW01	SW03	SW04	FS01	SW02	
	<i>Depth:</i>	2- ft	2- ft	2- ft	4- ft	2- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Aug-17-18 16:50	Aug-17-18 16:55	Aug-17-18 17:00	Aug-17-18 17:05	Aug-17-18 17:10	
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30	
	<i>Analyzed:</i>	Aug-26-18 08:21	Aug-26-18 08:41	Aug-26-18 09:02	Aug-26-18 09:22	Aug-26-18 09:43	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	
Ethylbenzene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	
m,p-Xylenes		<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00403 0.00403	<0.00404 0.00404	
o-Xylene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	
Total Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	
Total BTEX		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	
Inorganic Anions by EPA 300	<i>Extracted:</i>	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30	
	<i>Analyzed:</i>	Aug-21-18 21:18	Aug-21-18 21:35	Aug-21-18 21:40	Aug-21-18 21:46	Aug-21-18 21:51	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		260 4.99	118 4.98	641 24.9	1280 24.8	1120 25.0	
TPH by SW8015 Mod	<i>Extracted:</i>	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00	
	<i>Analyzed:</i>	Aug-21-18 21:35	Aug-21-18 21:54	Aug-21-18 22:14	Aug-21-18 22:34	Aug-21-18 22:53	
	<i>Units/RL:</i>	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	<14.9 14.9	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	66.4 14.9	91.2 15.0	<14.9 14.9	<15.0 15.0	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0	
Total TPH		<15.0 15.0	66.4 14.9	91.2 15.0	<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
Project Assistant



Certificate of Analytical Results 596448



LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **SW01**
Lab Sample Id: 596448-001

Matrix: Soil
Date Collected: 08.17.18 16.50

Date Received: 08.21.18 10.35
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	260	4.99	mg/kg	08.21.18 21.18		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.21.18 21.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.21.18 21.35	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.21.18 21.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.21.18 21.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	94	%	70-135	08.21.18 21.35		
o-Terphenyl	84-15-1	87	%	70-135	08.21.18 21.35		



Certificate of Analytical Results 596448



LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **SW01**
Lab Sample Id: 596448-001

Matrix: Soil
Date Collected: 08.17.18 16.50

Date Received: 08.21.18 10.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.26.18 08.21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.26.18 08.21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.26.18 08.21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.26.18 08.21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.26.18 08.21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.26.18 08.21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.26.18 08.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.26.18 08.21		
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.26.18 08.21		



Certificate of Analytical Results 596448



LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **SW03**
Lab Sample Id: 596448-002

Matrix: Soil
Date Collected: 08.17.18 16.55

Date Received: 08.21.18 10.35
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3060822

Prep Method: E300P
% Moisture:
Date Prep: 08.21.18 17.30
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	118	4.98	mg/kg	08.21.18 21.35		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3060852

Prep Method: TX1005P
% Moisture:
Date Prep: 08.21.18 16.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.21.18 21.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	66.4	14.9	mg/kg	08.21.18 21.54		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.21.18 21.54	U	1
Total TPH	PHC635	66.4	14.9	mg/kg	08.21.18 21.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	08.21.18 21.54	
o-Terphenyl	84-15-1	103	%	70-135	08.21.18 21.54	



Certificate of Analytical Results 596448



LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **SW03**
Lab Sample Id: 596448-002

Matrix: Soil
Date Collected: 08.17.18 16.55

Date Received: 08.21.18 10.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.26.18 08.41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.26.18 08.41	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.26.18 08.41	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.26.18 08.41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.26.18 08.41	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.26.18 08.41	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.26.18 08.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.26.18 08.41		
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.26.18 08.41		



Certificate of Analytical Results 596448



LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **SW04**
Lab Sample Id: 596448-003

Matrix: Soil
Date Collected: 08.17.18 17.00

Date Received: 08.21.18 10.35
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3060822

Prep Method: E300P
% Moisture:
Date Prep: 08.21.18 17.30
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	641	24.9	mg/kg	08.21.18 21.40		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3060852

Prep Method: TX1005P
% Moisture:
Date Prep: 08.21.18 16.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.21.18 22.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	91.2	15.0	mg/kg	08.21.18 22.14		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.21.18 22.14	U	1
Total TPH	PHC635	91.2	15.0	mg/kg	08.21.18 22.14		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	92	%	70-135	08.21.18 22.14		
o-Terphenyl	84-15-1	90	%	70-135	08.21.18 22.14		



Certificate of Analytical Results 596448



LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **SW04**
Lab Sample Id: 596448-003

Matrix: Soil
Date Collected: 08.17.18 17.00

Date Received: 08.21.18 10.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.26.18 09.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.26.18 09.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.26.18 09.02	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.26.18 09.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.26.18 09.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.26.18 09.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.26.18 09.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.26.18 09.02		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.26.18 09.02		



Certificate of Analytical Results 596448



LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **FS01**
Lab Sample Id: 596448-004

Matrix: Soil
Date Collected: 08.17.18 17.05

Date Received: 08.21.18 10.35
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1280	24.8	mg/kg	08.21.18 21.46		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.21.18 22.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.21.18 22.34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.21.18 22.34	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.21.18 22.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	87	%	70-135	08.21.18 22.34		
o-Terphenyl	84-15-1	87	%	70-135	08.21.18 22.34		



Certificate of Analytical Results 596448

LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **FS01**
 Lab Sample Id: 596448-004

Matrix: Soil
 Date Collected: 08.17.18 17.05

Date Received: 08.21.18 10.35
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.26.18 09.22	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.26.18 09.22	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.26.18 09.22	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	08.26.18 09.22	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.26.18 09.22	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.26.18 09.22	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.26.18 09.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	08.26.18 09.22		
1,4-Difluorobenzene	540-36-3	92	%	70-130	08.26.18 09.22		



Certificate of Analytical Results 596448



LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **SW02**
Lab Sample Id: 596448-005

Matrix: Soil
Date Collected: 08.17.18 17.10

Date Received: 08.21.18 10.35
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1120	25.0	mg/kg	08.21.18 21.51		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.21.18 22.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.21.18 22.53	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.21.18 22.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.21.18 22.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	90	%	70-135	08.21.18 22.53		
o-Terphenyl	84-15-1	88	%	70-135	08.21.18 22.53		



Certificate of Analytical Results 596448



LT Environmental, Inc., Arvada, CO

PLU-184

Sample Id: **SW02**
Lab Sample Id: 596448-005

Matrix: Soil
Date Collected: 08.17.18 17.10

Date Received: 08.21.18 10.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.26.18 09.43	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.26.18 09.43	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.26.18 09.43	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	08.26.18 09.43	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.26.18 09.43	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.26.18 09.43	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.26.18 09.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	08.26.18 09.43		
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.26.18 09.43		



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.
PLU-184

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3060822

MB Sample Id: 7660857-1-BLK

Matrix: Solid

LCS Sample Id: 7660857-1-BKS

Prep Method: E300P

Date Prep: 08.21.18

LCSD Sample Id: 7660857-1-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	249	100	90-110	0	20	mg/kg	08.21.18 20:35	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3060822

Parent Sample Id: 596446-008

Matrix: Soil

MS Sample Id: 596446-008 S

Prep Method: E300P

Date Prep: 08.21.18

MSD Sample Id: 596446-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	351	250	584	93	586	94	90-110	0	20	mg/kg	08.21.18 20:51	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3060822

Parent Sample Id: 596449-002

Matrix: Soil

MS Sample Id: 596449-002 S

Prep Method: E300P

Date Prep: 08.21.18

MSD Sample Id: 596449-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	74.4	248	325	101	324	101	90-110	0	20	mg/kg	08.21.18 22:08	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3060852

MB Sample Id: 7660865-1-BLK

Matrix: Solid

LCS Sample Id: 7660865-1-BKS

Prep Method: TX1005P

Date Prep: 08.21.18

LCSD Sample Id: 7660865-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	984	98	1000	100	70-135	2	20	mg/kg	08.21.18 19:38	
Diesel Range Organics (DRO)	<15.0	1000	989	99	1000	100	70-135	1	20	mg/kg	08.21.18 19:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		119		121		70-135	%	08.21.18 19:38
o-Terphenyl	95		102		102		70-135	%	08.21.18 19:38

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

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

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

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



LT Environmental, Inc.
PLU-184

Analytical Method: TPH by SW8015 Mod

Seq Number: 3060852

Parent Sample Id: 596317-009

Matrix: Soil

MS Sample Id: 596317-009 S

Prep Method: TX1005P

Date Prep: 08.21.18

MSD Sample Id: 596317-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1000	100	995	100	70-135	1	20	mg/kg	08.22.18 06:58	
Diesel Range Organics (DRO)	<15.0	1000	1030	103	1010	101	70-135	2	20	mg/kg	08.22.18 06:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		125		70-135	%	08.22.18 06:58
o-Terphenyl	102		102		70-135	%	08.22.18 06:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3061313

MB Sample Id: 7661181-1-BLK

Matrix: Solid

LCS Sample Id: 7661181-1-BKS

Prep Method: SW5030B

Date Prep: 08.25.18

LCSD Sample Id: 7661181-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0935	94	0.101	100	70-130	8	35	mg/kg	08.26.18 02:22	
Toluene	<0.00200	0.100	0.0863	86	0.0948	94	70-130	9	35	mg/kg	08.26.18 02:22	
Ethylbenzene	<0.00200	0.100	0.0976	98	0.104	103	70-130	6	35	mg/kg	08.26.18 02:22	
m,p-Xylenes	<0.00401	0.200	0.217	109	0.233	116	70-130	7	35	mg/kg	08.26.18 02:22	
o-Xylene	<0.00200	0.100	0.106	106	0.114	113	70-130	7	35	mg/kg	08.26.18 02:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		107		109		70-130	%	08.26.18 02:22
4-Bromofluorobenzene	112		106		115		70-130	%	08.26.18 02:22

Analytical Method: BTEX by EPA 8021B

Seq Number: 3061313

Parent Sample Id: 596319-008

Matrix: Soil

MS Sample Id: 596319-008 S

Prep Method: SW5030B

Date Prep: 08.25.18

MSD Sample Id: 596319-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0734	73	0.0633	63	70-130	15	35	mg/kg	08.26.18 03:04	X
Toluene	<0.00202	0.101	0.0649	64	0.0571	57	70-130	13	35	mg/kg	08.26.18 03:04	X
Ethylbenzene	<0.00202	0.101	0.0672	67	0.0608	61	70-130	10	35	mg/kg	08.26.18 03:04	X
m,p-Xylenes	<0.00403	0.202	0.148	73	0.131	66	70-130	12	35	mg/kg	08.26.18 03:04	X
o-Xylene	<0.00202	0.101	0.0689	68	0.0592	59	70-130	15	35	mg/kg	08.26.18 03:04	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		98		70-130	%	08.26.18 03:04
4-Bromofluorobenzene	101		124		70-130	%	08.26.18 03:04

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = 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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Page 1 of 1

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Phoenix, Arizona (480-355-0900)

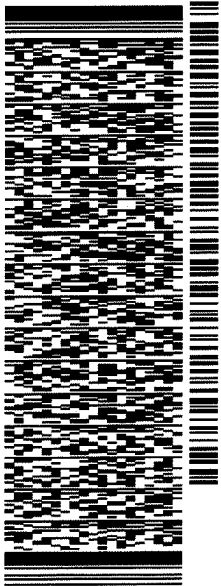
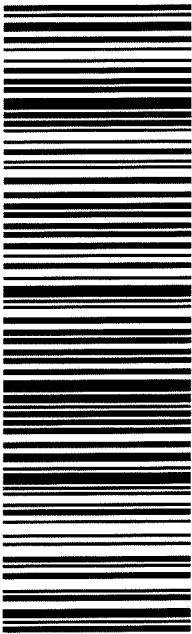
www.xenco.com

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes	
Company Name / Branch: <u>LT Environmental, Inc. Permian Office</u>				Project Name/Number: <u>PLU 184</u>									
Company Address: <u>3300 N. 45th Building Unit #103 Midland TX 79765</u>				Project Location: <u>MN-Eddy 2RP-4396</u>									
Email: <u>abaker@ltenv.com</u> Phone No: <u>432-794-5178</u>				Invoice To: <u>XTO-Energy - Kyle Littlell</u>									
Project Contact: <u>Adrian Baker</u>				PO Number: <u></u>									
Sampler's Name: <u>Yoda Leback</u>													

No.	Field ID / Point of Collection	Collection		Matrix	# of bottles	Number of preserved bottles							Notes	Field Comments	
		Sample Depth	Date / Time			HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH			NONE
1	SW01	2'	8/17/18 16:50	S	1									X	BTEX 8021 (only BTEX)
2	SW03	2'	16:55	S	1									X	TPH (GRO PRO MRO) 8015
3	SW04	2'	17:00	S	1									X	chloride (300.0)
4	SW02 FS01	4'	17:05	S	1									X	
5	SW02	2'	17:10	S	1									X	
6															
7															
8															
9															
10															

Turnaround Time (Business days)				Data Deliverable Information				Notes:			
☐ Same Day TAT ☐ 6 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>773018970000</u>			
Relinquished by Sampler: <u>Adrian Baker</u>				Relinquished by: <u>Adrian Baker</u>			
Relinquished by: <u>Adrian Baker</u>				Relinquished by: <u>Adrian Baker</u>			
Relinquished by: <u>Adrian Baker</u>				Relinquished by: <u>Adrian Baker</u>			
Date Time: <u>8/17/18 9:15</u>				Date Time: <u>8/17/18 15:30</u>			
Received By: <u>Adrian Baker</u>				Received By: <u>Adrian Baker</u>			
Custody Seal # <u>4</u>				Preserved when applicable <u></u>			
On Ice ☒				Cooler Temp. <u>85</u>			
Thermo Corr. Factor <u>0.0</u>							

ORIGIN ID:MAFA (806) 794-1296 XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 20AUG18 ACTWGT: 34.00 LB CAD: 101813706/NET4040 DIMS: 19x16x12 IN BILL RECIPIENT
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 INV: REF: PO: DEPT:		
 		
TRK# 7730 1897 6966 0201	TUE - 21 AUG 3:00P STANDARD OVERNIGHT	41 MAFA TX-US 79701 LBB
		

552J1/3309/DCA5

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Client: LT Environmental, Inc.

Date/ Time Received: 08/21/2018 10:35:00 AM

Work Order #: 596448

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.5
#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: 08/21/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/22/2018

Analytical Report 630873

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU 184

012918039

22-JUL-19

Collected By: Client



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

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

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

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



22-JUL-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **630873**

PLU 184

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 630873. 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. 630873 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 630873****LT Environmental, Inc., Arvada, CO**

PLU 184

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	07-11-19 12:15	2 ft	630873-001
PH01A	S	07-11-19 12:50	10 ft	630873-002
PH01B	S	07-11-19 13:20	16 ft	630873-003
PH01C	S	07-11-19 13:40	22 ft	630873-004
PH02	S	07-11-19 14:20	2 ft	630873-005
PH02A	S	07-11-19 14:25	4 ft	630873-006
PH03	S	07-11-19 14:35	2 ft	630873-007
PH03A	S	07-12-19 09:25	14 ft	630873-008
PH03B	S	07-12-19 09:55	22 ft	630873-009
PH04	S	07-12-19 10:10	2 ft	630873-010
PH04A	S	07-12-19 10:20	4 ft	630873-011
PH05	S	07-12-19 10:35	2 ft	630873-012
PH05A	S	07-12-19 10:45	4 ft	630873-013
PH06	S	07-12-19 10:55	2 ft	630873-014
PH06A	S	07-12-19 11:00	4 ft	630873-015
PH07	S	07-12-19 11:10	2 ft	630873-016
PH07A	S	07-12-19 11:20	4 ft	630873-017
PH08	S	07-12-19 11:40	2 ft	630873-018
PH08A	S	07-12-19 11:50	4 ft	630873-019
PH09	S	07-12-19 13:05	2 ft	630873-020
PH09A	S	07-12-19 13:20	4 ft	630873-021
PH10	S	07-12-19 13:35	2 ft	630873-022
PH10A	S	07-12-19 13:40	4 ft	630873-023

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU 184**Project ID: 012918039
Work Order Number(s): 630873Report Date: 22-JUL-19
Date Received: 07/15/2019**Sample receipt non conformances and comments:**

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:Batch: LBA-3095670 Inorganic Anions by EPA 300
BSD misinjection, qualified by passing MS/MSD

Batch: LBA-3095789 BTEX by EPA 8021B

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

Batch: LBA-3095790 BTEX by EPA 8021B

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

Lab Sample ID 630873-001 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: 630873-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.

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

Batch: LBA-3095868 TPH by SW8015 Mod

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

Samples affected are: 630873-023,630873-022.

Batch: LBA-3096048 TPH by SW8015 Mod

Outlier/s are due to possible matrix interference.

Lab Sample ID 630873-001 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: 630873-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020

Certificate of Analysis Summary 630873



LT Environmental, Inc., Arvada, CO

Project Name: PLU 184

Project Id: 012918039
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-15-19 11:55 am
Report Date: 22-JUL-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	630873-001	630873-002	630873-003	630873-004	630873-005	630873-006
	<i>Field Id:</i>	PH01	PH01A	PH01B	PH01C	PH02	PH02A
	<i>Depth:</i>	2- ft	10- ft	16- ft	22- ft	2- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-11-19 12:15	Jul-11-19 12:50	Jul-11-19 13:20	Jul-11-19 13:40	Jul-11-19 14:20	Jul-11-19 14:25
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04
	<i>Analyzed:</i>	Jul-17-19 13:16	Jul-17-19 13:39	Jul-17-19 14:24	Jul-17-19 16:54	Jul-17-19 17:14	Jul-18-19 13:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00398 0.00398	<0.00397 0.00397	<0.00401 0.00401	<0.00398 0.00398	<0.00400 0.00400
o-Xylene		<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20
	<i>Analyzed:</i>	Jul-17-19 20:27	Jul-17-19 20:34	Jul-17-19 20:41	Jul-17-19 19:22	Jul-17-19 20:49	Jul-17-19 20:56
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5160 25.2	1140 25.0	1240 5.02	80.3 4.99	57.0 4.97	36.6 4.96
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00
	<i>Analyzed:</i>	Jul-20-19 12:34	Jul-20-19 13:46	Jul-20-19 14:10	Jul-20-19 14:34	Jul-20-19 14:58	Jul-20-19 15:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<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)		139 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	202 15.0	80.2 15.0
Motor Oil Range Hydrocarbons (MRO)		47.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	38.9 15.0	21.6 15.0
Total TPH		186 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	241 15.0	102 15.0
Total GRO-DRO		139 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	202 15.0	80.2 15.0

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 630873

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184

Project Id: 012918039
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-15-19 11:55 am
Report Date: 22-JUL-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	630873-007	630873-008	630873-009	630873-010	630873-011	630873-012
	<i>Field Id:</i>	PH03	PH03A	PH03B	PH04	PH04A	PH05
	<i>Depth:</i>	2- ft	14- ft	22- ft	2- ft	4- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-11-19 14:35	Jul-12-19 09:25	Jul-12-19 09:55	Jul-12-19 10:10	Jul-12-19 10:20	Jul-12-19 10:35
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04
	<i>Analyzed:</i>	Jul-17-19 18:01	Jul-17-19 18:22	Jul-17-19 18:42	Jul-17-19 19:02	Jul-18-19 13:55	Jul-18-19 14:15
	<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	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		<0.00399 0.00399	<0.00402 0.00402	<0.00402 0.00402	<0.00399 0.00399	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20
	<i>Analyzed:</i>	Jul-17-19 21:03	Jul-17-19 21:25	Jul-17-19 21:32	Jul-17-19 21:54	Jul-17-19 22:01	Jul-17-19 22:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		484 4.99	615 5.00	737 5.00	437 5.03	179 5.05	51.3 5.05
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00
	<i>Analyzed:</i>	Jul-20-19 15:46	Jul-20-19 16:10	Jul-20-19 16:34	Jul-20-19 16:59	Jul-20-19 17:47	Jul-20-19 18:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
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	45.9 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	45.9 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	45.9 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 630873

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184

Project Id: 012918039
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-15-19 11:55 am
Report Date: 22-JUL-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	630873-013	630873-014	630873-015	630873-016	630873-017	630873-018
	<i>Field Id:</i>	PH05A	PH06	PH06A	PH07	PH07A	PH08
	<i>Depth:</i>	4- ft	2- ft	4- ft	2- ft	4- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-12-19 10:45	Jul-12-19 10:55	Jul-12-19 11:00	Jul-12-19 11:10	Jul-12-19 11:20	Jul-12-19 11:40
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 03:04
	<i>Analyzed:</i>	Jul-17-19 21:23	Jul-17-19 21:43	Jul-17-19 22:04	Jul-17-19 22:24	Jul-17-19 22:44	Jul-17-19 23:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00401 0.00401	<0.00399 0.00399	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 11:20	Jul-17-19 12:15	Jul-17-19 12:15
	<i>Analyzed:</i>	Jul-17-19 22:16	Jul-17-19 22:23	Jul-17-19 22:30	Jul-17-19 22:37	Jul-17-19 14:56	Jul-17-19 15:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		67.0 5.05	180 5.00	182 4.96	8.86 4.99	6.18 5.04	<5.01 5.01
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00	Jul-20-19 08:00
	<i>Analyzed:</i>	Jul-20-19 18:35	Jul-20-19 19:00	Jul-20-19 19:24	Jul-20-19 19:48	Jul-20-19 20:12	Jul-20-19 20:36
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 630873



LT Environmental, Inc., Arvada, CO

Project Name: PLU 184

Project Id: 012918039
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-15-19 11:55 am
Report Date: 22-JUL-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	630873-019	630873-020	630873-021	630873-022	630873-023	
	<i>Field Id:</i>	PH08A	PH09	PH09A	PH10	PH10A	
	<i>Depth:</i>	4- ft	2- ft	4- ft	2- ft	4- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jul-12-19 11:50	Jul-12-19 13:05	Jul-12-19 13:20	Jul-12-19 13:35	Jul-12-19 13:40	
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-16-19 03:04	Jul-16-19 03:04	Jul-16-19 15:51	Jul-16-19 15:51	Jul-16-19 15:51	
	<i>Analyzed:</i>	Jul-17-19 23:24	Jul-17-19 23:44	Jul-18-19 02:13	Jul-18-19 02:38	Jul-18-19 03:00	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	
Toluene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	
Ethylbenzene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	
m,p-Xylenes		<0.00396 0.00396	<0.00402 0.00402	<0.00398 0.00398	<0.00402 0.00402	<0.00402 0.00402	
o-Xylene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	
Total Xylenes		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	
Total BTEX		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-17-19 12:15	Jul-17-19 12:15	Jul-17-19 10:45	Jul-17-19 10:45	Jul-17-19 10:45	
	<i>Analyzed:</i>	Jul-17-19 15:15	Jul-17-19 15:20	Jul-17-19 11:33	Jul-17-19 11:48	Jul-17-19 11:53	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		39.8 4.98	73.7 4.96	377 5.00	13.5 5.05	37.6 5.00	
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-20-19 08:00	Jul-20-19 08:00	Jul-18-19 15:00	Jul-18-19 15:00	Jul-18-19 15:00	
	<i>Analyzed:</i>	Jul-20-19 21:00	Jul-20-19 21:24	Jul-19-19 07:32	Jul-19-19 07:57	Jul-19-19 09:46	
	<i>Units/RL:</i>	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	
Diesel Range Organics (DRO)		<15.0 15.0	35.2 15.0	36.4 15.0	28.8 15.0	119 15.0	
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	20.4 15.0	
Total TPH		<15.0 15.0	35.2 15.0	36.4 15.0	28.8 15.0	139 15.0	
Total GRO-DRO		<15.0 15.0	35.2 15.0	36.4 15.0	28.8 15.0	119 15.0	

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-001 Date Collected: 07.11.19 12.15 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5160	25.2	mg/kg	07.17.19 20.27		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 12.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	139	15.0	mg/kg	07.20.19 12.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	47.0	15.0	mg/kg	07.20.19 12.34		1
Total TPH	PHC635	186	15.0	mg/kg	07.20.19 12.34		1
Total GRO-DRO	PHC628	139	15.0	mg/kg	07.20.19 12.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	07.20.19 12.34	
o-Terphenyl	84-15-1	92	%	70-135	07.20.19 12.34	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01**
Lab Sample Id: 630873-001

Matrix: Soil
Date Collected: 07.11.19 12.15

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.17.19 13.16	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.17.19 13.16	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.17.19 13.16	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.17.19 13.16	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.17.19 13.16	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.17.19 13.16	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.17.19 13.16	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.17.19 13.16		
4-Bromofluorobenzene	460-00-4	92	%	70-130	07.17.19 13.16		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01A** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-002 Date Collected: 07.11.19 12.50 Sample Depth: 10 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1140	25.0	mg/kg	07.17.19 20.34		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 13.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 13.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 13.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 13.46	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 13.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	07.20.19 13.46	
o-Terphenyl	84-15-1	78	%	70-135	07.20.19 13.46	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01A**
Lab Sample Id: 630873-002

Matrix: Soil
Date Collected: 07.11.19 12.50

Date Received: 07.15.19 11.55
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.17.19 13.39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.17.19 13.39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.17.19 13.39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.17.19 13.39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.17.19 13.39	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.17.19 13.39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.17.19 13.39	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	07.17.19 13.39		
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.17.19 13.39		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01B** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-003 Date Collected: 07.11.19 13.20 Sample Depth: 16 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1240	5.02	mg/kg	07.17.19 20.41		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 14.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 14.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 14.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 14.10	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 14.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	07.20.19 14.10	
o-Terphenyl	84-15-1	79	%	70-135	07.20.19 14.10	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01B**
Lab Sample Id: 630873-003

Matrix: Soil
Date Collected: 07.11.19 13.20

Date Received: 07.15.19 11.55
Sample Depth: 16 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.17.19 14.24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.17.19 14.24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.17.19 14.24	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.17.19 14.24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.17.19 14.24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.17.19 14.24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.17.19 14.24	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	70-130	07.17.19 14.24		
1,4-Difluorobenzene	540-36-3	116	%	70-130	07.17.19 14.24		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01C** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-004 Date Collected: 07.11.19 13.40 Sample Depth: 22 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	80.3	4.99	mg/kg	07.17.19 19.22		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 14.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 14.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 14.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 14.34	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 14.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	07.20.19 14.34	
o-Terphenyl	84-15-1	90	%	70-135	07.20.19 14.34	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH01C**
Lab Sample Id: 630873-004

Matrix: Soil
Date Collected: 07.11.19 13.40

Date Received: 07.15.19 11.55
Sample Depth: 22 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.17.19 16.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.17.19 16.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.17.19 16.54	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.17.19 16.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.17.19 16.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.17.19 16.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.17.19 16.54	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113		%	70-130	07.17.19 16.54	
4-Bromofluorobenzene	460-00-4	92		%	70-130	07.17.19 16.54	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH02** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-005 Date Collected: 07.11.19 14.20 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	57.0	4.97	mg/kg	07.17.19 20.49		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 14.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	202	15.0	mg/kg	07.20.19 14.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	38.9	15.0	mg/kg	07.20.19 14.58		1
Total TPH	PHC635	241	15.0	mg/kg	07.20.19 14.58		1
Total GRO-DRO	PHC628	202	15.0	mg/kg	07.20.19 14.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	07.20.19 14.58	
o-Terphenyl	84-15-1	101	%	70-135	07.20.19 14.58	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH02**
Lab Sample Id: 630873-005

Matrix: Soil
Date Collected: 07.11.19 14.20

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.17.19 17.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.17.19 17.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.17.19 17.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.17.19 17.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.17.19 17.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.17.19 17.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.17.19 17.14	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	120		%	70-130	07.17.19 17.14	
4-Bromofluorobenzene	460-00-4	98		%	70-130	07.17.19 17.14	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH02A**
Lab Sample Id: 630873-006

Matrix: Soil
Date Collected: 07.11.19 14.25

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095670

Date Prep: 07.17.19 11.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	36.6	4.96	mg/kg	07.17.19 20.56		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096048

Date Prep: 07.20.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 15.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	80.2	15.0	mg/kg	07.20.19 15.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	21.6	15.0	mg/kg	07.20.19 15.22		1
Total TPH	PHC635	102	15.0	mg/kg	07.20.19 15.22		1
Total GRO-DRO	PHC628	80.2	15.0	mg/kg	07.20.19 15.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	07.20.19 15.22	
o-Terphenyl	84-15-1	112	%	70-135	07.20.19 15.22	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH02A**
Lab Sample Id: 630873-006

Matrix: Soil
Date Collected: 07.11.19 14.25

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.18.19 13.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.18.19 13.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.18.19 13.35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.18.19 13.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.18.19 13.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.18.19 13.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.18.19 13.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	07.18.19 13.35		
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.18.19 13.35		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03**
Lab Sample Id: 630873-007

Matrix: Soil
Date Collected: 07.11.19 14.35

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095670

Date Prep: 07.17.19 11.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	484	4.99	mg/kg	07.17.19 21.03		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096048

Date Prep: 07.20.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 15.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 15.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 15.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 15.46	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 15.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	07.20.19 15.46	
o-Terphenyl	84-15-1	91	%	70-135	07.20.19 15.46	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03**
Lab Sample Id: 630873-007

Matrix: Soil
Date Collected: 07.11.19 14.35

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.17.19 18.01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.17.19 18.01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.17.19 18.01	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.17.19 18.01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.17.19 18.01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.17.19 18.01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.17.19 18.01	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	07.17.19 18.01		
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.17.19 18.01		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03A** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-008 Date Collected: 07.12.19 09.25 Sample Depth: 14 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	615	5.00	mg/kg	07.17.19 21.25		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 16.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 16.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 16.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 16.10	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 16.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	07.20.19 16.10	
o-Terphenyl	84-15-1	86	%	70-135	07.20.19 16.10	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03A**
Lab Sample Id: 630873-008

Matrix: Soil
Date Collected: 07.12.19 09.25

Date Received: 07.15.19 11.55
Sample Depth: 14 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.17.19 18.22	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.17.19 18.22	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.17.19 18.22	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.17.19 18.22	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.17.19 18.22	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.17.19 18.22	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.17.19 18.22	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111		%	70-130	07.17.19 18.22	
4-Bromofluorobenzene	460-00-4	92		%	70-130	07.17.19 18.22	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03B** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-009 Date Collected: 07.12.19 09.55 Sample Depth: 22 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	737	5.00	mg/kg	07.17.19 21.32		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 16.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 16.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 16.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 16.34	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 16.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	07.20.19 16.34	
o-Terphenyl	84-15-1	81	%	70-135	07.20.19 16.34	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH03B**
Lab Sample Id: 630873-009

Matrix: Soil
Date Collected: 07.12.19 09.55

Date Received: 07.15.19 11.55
Sample Depth: 22 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.17.19 18.42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.17.19 18.42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.17.19 18.42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.17.19 18.42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.17.19 18.42	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.17.19 18.42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.17.19 18.42	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	07.17.19 18.42		
1,4-Difluorobenzene	540-36-3	118	%	70-130	07.17.19 18.42		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH04** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-010 Date Collected: 07.12.19 10.10 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	437	5.03	mg/kg	07.17.19 21.54		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 16.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	45.9	15.0	mg/kg	07.20.19 16.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 16.59	U	1
Total TPH	PHC635	45.9	15.0	mg/kg	07.20.19 16.59		1
Total GRO-DRO	PHC628	45.9	15.0	mg/kg	07.20.19 16.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	07.20.19 16.59	
o-Terphenyl	84-15-1	87	%	70-135	07.20.19 16.59	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH04**
Lab Sample Id: 630873-010

Matrix: Soil
Date Collected: 07.12.19 10.10

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.17.19 19.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.17.19 19.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.17.19 19.02	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.17.19 19.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.17.19 19.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.17.19 19.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.17.19 19.02	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		115	%	70-130	07.17.19 19.02	
4-Bromofluorobenzene	460-00-4		99	%	70-130	07.17.19 19.02	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH04A**
Lab Sample Id: 630873-011

Matrix: Soil
Date Collected: 07.12.19 10.20

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095670

Date Prep: 07.17.19 11.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	179	5.05	mg/kg	07.17.19 22.01		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096048

Date Prep: 07.20.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 17.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 17.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 17.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 17.47	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 17.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	07.20.19 17.47	
o-Terphenyl	84-15-1	83	%	70-135	07.20.19 17.47	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH04A**
Lab Sample Id: 630873-011

Matrix: Soil
Date Collected: 07.12.19 10.20

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.18.19 13.55	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.18.19 13.55	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.18.19 13.55	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.18.19 13.55	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.18.19 13.55	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.18.19 13.55	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.18.19 13.55	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.18.19 13.55		
4-Bromofluorobenzene	460-00-4	102	%	70-130	07.18.19 13.55		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH05** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-012 Date Collected: 07.12.19 10.35 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.3	5.05	mg/kg	07.17.19 22.08		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 18.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 18.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 18.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 18.11	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 18.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	07.20.19 18.11	
o-Terphenyl	84-15-1	72	%	70-135	07.20.19 18.11	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH05**
Lab Sample Id: 630873-012

Matrix: Soil
Date Collected: 07.12.19 10.35

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.18.19 14.15	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.18.19 14.15	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.18.19 14.15	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.18.19 14.15	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.18.19 14.15	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.18.19 14.15	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.18.19 14.15	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	07.18.19 14.15		
1,4-Difluorobenzene	540-36-3	116	%	70-130	07.18.19 14.15		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH05A** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-013 Date Collected: 07.12.19 10.45 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	67.0	5.05	mg/kg	07.17.19 22.16		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 18.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 18.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 18.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 18.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 18.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	07.20.19 18.35	
o-Terphenyl	84-15-1	76	%	70-135	07.20.19 18.35	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH05A**
Lab Sample Id: 630873-013

Matrix: Soil
Date Collected: 07.12.19 10.45

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.17.19 21.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.17.19 21.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.17.19 21.23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.17.19 21.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.17.19 21.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.17.19 21.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.17.19 21.23	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	07.17.19 21.23		
1,4-Difluorobenzene	540-36-3	114	%	70-130	07.17.19 21.23		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH06** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-014 Date Collected: 07.12.19 10.55 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	180	5.00	mg/kg	07.17.19 22.23		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 19.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 19.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 19.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 19.00	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 19.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	07.20.19 19.00	
o-Terphenyl	84-15-1	82	%	70-135	07.20.19 19.00	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH06**
Lab Sample Id: 630873-014

Matrix: Soil
Date Collected: 07.12.19 10.55

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.17.19 21.43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.17.19 21.43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.17.19 21.43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.17.19 21.43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.17.19 21.43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.17.19 21.43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.17.19 21.43	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		93	%	70-130	07.17.19 21.43	
1,4-Difluorobenzene	540-36-3		113	%	70-130	07.17.19 21.43	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH06A**
Lab Sample Id: 630873-015

Matrix: Soil
Date Collected: 07.12.19 11.00

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095670

Date Prep: 07.17.19 11.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	182	4.96	mg/kg	07.17.19 22.30		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096048

Date Prep: 07.20.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 19.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 19.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 19.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 19.24	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 19.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	07.20.19 19.24	
o-Terphenyl	84-15-1	83	%	70-135	07.20.19 19.24	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH06A**
Lab Sample Id: 630873-015

Matrix: Soil
Date Collected: 07.12.19 11.00

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.17.19 22.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.17.19 22.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.17.19 22.04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.17.19 22.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.17.19 22.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.17.19 22.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.17.19 22.04	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115		%	70-130	07.17.19 22.04	
4-Bromofluorobenzene	460-00-4	98		%	70-130	07.17.19 22.04	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH07** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-016 Date Collected: 07.12.19 11.10 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 11.20 Basis: Wet Weight
 Seq Number: 3095670 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.86	4.99	mg/kg	07.17.19 22.37		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 19.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 19.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 19.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 19.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 19.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	07.20.19 19.48	
o-Terphenyl	84-15-1	90	%	70-135	07.20.19 19.48	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH07**
Lab Sample Id: 630873-016

Matrix: Soil
Date Collected: 07.12.19 11.10

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.17.19 22.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.17.19 22.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.17.19 22.24	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.17.19 22.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.17.19 22.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.17.19 22.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.17.19 22.24	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	07.17.19 22.24		
1,4-Difluorobenzene	540-36-3	114	%	70-130	07.17.19 22.24		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH07A**
Lab Sample Id: 630873-017

Matrix: Soil
Date Collected: 07.12.19 11.20

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095738

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.18	5.04	mg/kg	07.17.19 14.56		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096048

Date Prep: 07.20.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 20.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 20.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 20.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 20.12	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 20.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	07.20.19 20.12	
o-Terphenyl	84-15-1	82	%	70-135	07.20.19 20.12	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH07A**
Lab Sample Id: 630873-017

Matrix: Soil
Date Collected: 07.12.19 11.20

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.17.19 22.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.17.19 22.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.17.19 22.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.17.19 22.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.17.19 22.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.17.19 22.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.17.19 22.44	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	07.17.19 22.44		
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.17.19 22.44		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH08**
Lab Sample Id: 630873-018

Matrix: Soil
Date Collected: 07.12.19 11.40

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095738

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.01	5.01	mg/kg	07.17.19 15.10	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096048

Date Prep: 07.20.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 20.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 20.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 20.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 20.36	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 20.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	07.20.19 20.36	
o-Terphenyl	84-15-1	78	%	70-135	07.20.19 20.36	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH08**
Lab Sample Id: 630873-018

Matrix: Soil
Date Collected: 07.12.19 11.40

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.17.19 23.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.17.19 23.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.17.19 23.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.17.19 23.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.17.19 23.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.17.19 23.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.17.19 23.04	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	07.17.19 23.04		
1,4-Difluorobenzene	540-36-3	113	%	70-130	07.17.19 23.04		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH08A** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-019 Date Collected: 07.12.19 11.50 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 12.15 Basis: Wet Weight
 Seq Number: 3095738 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.8	4.98	mg/kg	07.17.19 15.15		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.20.19 08.00 Basis: Wet Weight
 Seq Number: 3096048 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 21.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.20.19 21.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 21.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.20.19 21.00	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.20.19 21.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	07.20.19 21.00	
o-Terphenyl	84-15-1	112	%	70-135	07.20.19 21.00	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH08A**
Lab Sample Id: 630873-019

Matrix: Soil
Date Collected: 07.12.19 11.50

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.17.19 23.24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.17.19 23.24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.17.19 23.24	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	07.17.19 23.24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.17.19 23.24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.17.19 23.24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.17.19 23.24	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96		%	70-130	07.17.19 23.24	
1,4-Difluorobenzene	540-36-3	107		%	70-130	07.17.19 23.24	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH09**
Lab Sample Id: 630873-020

Matrix: Soil
Date Collected: 07.12.19 13.05

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095738

Date Prep: 07.17.19 12.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	73.7	4.96	mg/kg	07.17.19 15.20		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096048

Date Prep: 07.20.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.20.19 21.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	35.2	15.0	mg/kg	07.20.19 21.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.20.19 21.24	U	1
Total TPH	PHC635	35.2	15.0	mg/kg	07.20.19 21.24		1
Total GRO-DRO	PHC628	35.2	15.0	mg/kg	07.20.19 21.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	07.20.19 21.24	
o-Terphenyl	84-15-1	81	%	70-135	07.20.19 21.24	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH09**
Lab Sample Id: 630873-020

Matrix: Soil
Date Collected: 07.12.19 13.05

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095790

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 03.04

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.17.19 23.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.17.19 23.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.17.19 23.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.17.19 23.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.17.19 23.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.17.19 23.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.17.19 23.44	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	70-130	07.17.19 23.44		
1,4-Difluorobenzene	540-36-3	112	%	70-130	07.17.19 23.44		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH09A**
Lab Sample Id: 630873-021

Matrix: Soil
Date Collected: 07.12.19 13.20

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095727

Date Prep: 07.17.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	377	5.00	mg/kg	07.17.19 11.33		1

Analytical Method: TPH by SW8015 Mod

Tech: ALG

Analyst: ARM

Seq Number: 3095868

Date Prep: 07.18.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 07.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	36.4	15.0	mg/kg	07.19.19 07.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 07.32	U	1
Total TPH	PHC635	36.4	15.0	mg/kg	07.19.19 07.32		1
Total GRO-DRO	PHC628	36.4	15.0	mg/kg	07.19.19 07.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	07.19.19 07.32	
o-Terphenyl	84-15-1	117	%	70-135	07.19.19 07.32	



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH09A**
Lab Sample Id: 630873-021

Matrix: Soil
Date Collected: 07.12.19 13.20

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095789

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 15.51

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.18.19 02.13	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.18.19 02.13	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.18.19 02.13	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.18.19 02.13	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.18.19 02.13	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.18.19 02.13	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.18.19 02.13	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	07.18.19 02.13		
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.18.19 02.13		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH10** Matrix: Soil Date Received: 07.15.19 11.55
 Lab Sample Id: 630873-022 Date Collected: 07.12.19 13.35 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.17.19 10.45 Basis: Wet Weight
 Seq Number: 3095727 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.5	5.05	mg/kg	07.17.19 11.48		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ALG % Moisture:
 Analyst: ARM Date Prep: 07.18.19 15.00 Basis: Wet Weight
 Seq Number: 3095868 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 07.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	28.8	15.0	mg/kg	07.19.19 07.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 07.57	U	1
Total TPH	PHC635	28.8	15.0	mg/kg	07.19.19 07.57		1
Total GRO-DRO	PHC628	28.8	15.0	mg/kg	07.19.19 07.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	07.19.19 07.57	
o-Terphenyl	84-15-1	142	%	70-135	07.19.19 07.57	**



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH10**
Lab Sample Id: 630873-022

Matrix: Soil
Date Collected: 07.12.19 13.35

Date Received: 07.15.19 11.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095789

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 15.51

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.18.19 02.38	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.18.19 02.38	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.18.19 02.38	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.18.19 02.38	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.18.19 02.38	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.18.19 02.38	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.18.19 02.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	07.18.19 02.38		
4-Bromofluorobenzene	460-00-4	95	%	70-130	07.18.19 02.38		



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH10A**
Lab Sample Id: 630873-023

Matrix: Soil
Date Collected: 07.12.19 13.40

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095727

Date Prep: 07.17.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.6	5.00	mg/kg	07.17.19 11.53		1

Analytical Method: TPH by SW8015 Mod

Tech: ALG

Analyst: ARM

Seq Number: 3095868

Date Prep: 07.18.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 09.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	119	15.0	mg/kg	07.19.19 09.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	20.4	15.0	mg/kg	07.19.19 09.46		1
Total TPH	PHC635	139	15.0	mg/kg	07.19.19 09.46		1
Total GRO-DRO	PHC628	119	15.0	mg/kg	07.19.19 09.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	07.19.19 09.46	
o-Terphenyl	84-15-1	167	%	70-135	07.19.19 09.46	**



Certificate of Analytical Results 630873

LT Environmental, Inc., Arvada, CO

PLU 184

Sample Id: **PH10A**
Lab Sample Id: 630873-023

Matrix: Soil
Date Collected: 07.12.19 13.40

Date Received: 07.15.19 11.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3095789

Prep Method: SW5030B

% Moisture:

Date Prep: 07.16.19 15.51

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.18.19 03.00	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.18.19 03.00	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.18.19 03.00	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.18.19 03.00	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.18.19 03.00	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.18.19 03.00	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.18.19 03.00	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106		%	70-130	07.18.19 03.00	
1,4-Difluorobenzene	540-36-3	101		%	70-130	07.18.19 03.00	



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.

PLU 184

Analytical Method: Chloride by EPA 300

Seq Number: 3095727

MB Sample Id: 7682182-1-BLK

Matrix: Solid

LCS Sample Id: 7682182-1-BKS

Prep Method: E300P

Date Prep: 07.17.19

LCSD Sample Id: 7682182-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	239	96	238	95	90-110	0	20	mg/kg	07.17.19 11:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3095738

MB Sample Id: 7682185-1-BLK

Matrix: Solid

LCS Sample Id: 7682185-1-BKS

Prep Method: E300P

Date Prep: 07.17.19

LCSD Sample Id: 7682185-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	239	96	238	95	90-110	0	20	mg/kg	07.17.19 14:46	

Analytical Method: Chloride by EPA 300

Seq Number: 3095670

MB Sample Id: 7682234-1-BLK

Matrix: Solid

LCS Sample Id: 7682234-1-BKS

Prep Method: E300P

Date Prep: 07.17.19

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Chloride	<0.858	250	238	95	90-110	mg/kg	07.17.19 19:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3095727

Parent Sample Id: 630873-021

Matrix: Soil

MS Sample Id: 630873-021 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 630873-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	377	250	603	90	601	90	90-110	0	20	mg/kg	07.17.19 11:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3095727

Parent Sample Id: 631030-005

Matrix: Soil

MS Sample Id: 631030-005 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 631030-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	35.8	251	284	99	285	99	90-110	0	20	mg/kg	07.17.19 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.

PLU 184

Analytical Method: Chloride by EPA 300

Seq Number: 3095670

Parent Sample Id: 630873-004

Matrix: Soil

MS Sample Id: 630873-004 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 630873-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	80.3	250	323	97	323	97	90-110	0	20	mg/kg	07.17.19 19:29	

Analytical Method: Chloride by EPA 300

Seq Number: 3095670

Parent Sample Id: 630873-007

Matrix: Soil

MS Sample Id: 630873-007 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 630873-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	484	250	708	90	709	90	90-110	0	20	mg/kg	07.17.19 21:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3095738

Parent Sample Id: 630873-017

Matrix: Soil

MS Sample Id: 630873-017 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 630873-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.18	252	250	97	250	97	90-110	0	20	mg/kg	07.17.19 15:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3095738

Parent Sample Id: 631057-001

Matrix: Soil

MS Sample Id: 631057-001 S

Prep Method: E300P

Date Prep: 07.17.19

MSD Sample Id: 631057-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	270	250	495	90	494	90	90-110	0	20	mg/kg	07.17.19 16:09	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3095868

MB Sample Id: 7682341-1-BLK

Matrix: Solid

LCS Sample Id: 7682341-1-BKS

Prep Method: TX1005P

Date Prep: 07.18.19

LCSD Sample Id: 7682341-1-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	1160	116	1150	115	70-135	1	20	mg/kg	07.18.19 22:50	
Diesel Range Organics (DRO)	<8.13	1000	1170	117	1150	115	70-135	2	20	mg/kg	07.18.19 22:50	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		107		104		70-135	%	07.18.19 22:50
o-Terphenyl	131		118		115		70-135	%	07.18.19 22:50

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

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

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

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



LT Environmental, Inc.

PLU 184

Analytical Method: TPH by SW8015 Mod

Seq Number: 3096048

MB Sample Id: 7682446-1-BLK

Matrix: Solid

LCS Sample Id: 7682446-1-BKS

Prep Method: TX1005P

Date Prep: 07.20.19

LCSD Sample Id: 7682446-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1170	117	1120	112	70-135	4	20	mg/kg	07.20.19 11:47	
Diesel Range Organics (DRO)	<15.0	1000	1130	113	1170	117	70-135	3	20	mg/kg	07.20.19 11:47	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	107		111		98		70-135	%	07.20.19 11:47			
o-Terphenyl	98		109		104		70-135	%	07.20.19 11:47			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3095868

Parent Sample Id: 631095-001

Matrix: Soil

MS Sample Id: 631095-001 S

Prep Method: TX1005P

Date Prep: 07.18.19

MSD Sample Id: 631095-001 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)	10.8	997	1100	109	1090	108	70-135	1	20	mg/kg	07.19.19 00:01	
Diesel Range Organics (DRO)	12.7	997	1110	110	1100	109	70-135	1	20	mg/kg	07.19.19 00:01	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			97		95		70-135	%	07.19.19 00:01			
o-Terphenyl			104		101		70-135	%	07.19.19 00:01			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3096048

Parent Sample Id: 630873-001

Matrix: Soil

MS Sample Id: 630873-001 S

Prep Method: TX1005P

Date Prep: 07.20.19

MSD Sample Id: 630873-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	1080	108	1140	114	70-135	5	20	mg/kg	07.20.19 12:58	
Diesel Range Organics (DRO)	139	998	1200	106	1220	108	70-135	2	20	mg/kg	07.20.19 12:58	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			86		90		70-135	%	07.20.19 12:58			
o-Terphenyl			87		83		70-135	%	07.20.19 12:58			

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

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

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

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



LT Environmental, Inc.

PLU 184

Analytical Method: BTEX by EPA 8021B

Seq Number: 3095790

MB Sample Id: 7682126-1-BLK

Matrix: Solid

LCS Sample Id: 7682126-1-BKS

Prep Method: SW5030B

Date Prep: 07.16.19

LCSD Sample Id: 7682126-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.101	101	0.109	109	70-130	8	35	mg/kg	07.17.19 10:50	
Toluene	<0.00200	0.100	0.0957	96	0.100	100	70-130	4	35	mg/kg	07.17.19 10:50	
Ethylbenzene	<0.00200	0.100	0.0926	93	0.0961	96	70-130	4	35	mg/kg	07.17.19 10:50	
m,p-Xylenes	<0.00101	0.200	0.191	96	0.196	98	70-130	3	35	mg/kg	07.17.19 10:50	
o-Xylene	<0.00200	0.100	0.0925	93	0.0970	97	70-130	5	35	mg/kg	07.17.19 10:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		104		70-130	%	07.17.19 10:50
4-Bromofluorobenzene	87		92		90		70-130	%	07.17.19 10:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3095789

MB Sample Id: 7682121-1-BLK

Matrix: Solid

LCS Sample Id: 7682121-1-BKS

Prep Method: SW5030B

Date Prep: 07.16.19

LCSD Sample Id: 7682121-1-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	0.0991	99	0.0911	91	70-130	8	35	mg/kg	07.17.19 04:01	
Toluene	<0.00200	0.100	0.0980	98	0.0898	90	70-130	9	35	mg/kg	07.17.19 04:01	
Ethylbenzene	<0.00200	0.100	0.110	110	0.102	102	70-130	8	35	mg/kg	07.17.19 04:01	
m,p-Xylenes	<0.00400	0.200	0.221	111	0.210	105	70-130	5	35	mg/kg	07.17.19 04:01	
o-Xylene	<0.00200	0.100	0.107	107	0.104	104	70-130	3	35	mg/kg	07.17.19 04:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		92		95		70-130	%	07.17.19 04:01
4-Bromofluorobenzene	93		99		105		70-130	%	07.17.19 04:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3095790

Parent Sample Id: 630873-001

Matrix: Soil

MS Sample Id: 630873-001 S

Prep Method: SW5030B

Date Prep: 07.16.19

MSD Sample Id: 630873-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0990	99	0.0952	96	70-130	4	35	mg/kg	07.17.19 11:36	
Toluene	<0.00200	0.0998	0.0843	84	0.0735	74	70-130	14	35	mg/kg	07.17.19 11:36	
Ethylbenzene	<0.00200	0.0998	0.0733	73	0.0550	56	70-130	29	35	mg/kg	07.17.19 11:36	X
m,p-Xylenes	<0.00399	0.200	0.146	73	0.112	57	70-130	26	35	mg/kg	07.17.19 11:36	X
o-Xylene	<0.00200	0.0998	0.0729	73	0.0573	58	70-130	24	35	mg/kg	07.17.19 11:36	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		117		70-130	%	07.17.19 11:36
4-Bromofluorobenzene	90		93		70-130	%	07.17.19 11:36

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.

PLU 184

Analytical Method: BTEX by EPA 8021B

Seq Number: 3095789

Parent Sample Id: 630738-001

Matrix: Soil

MS Sample Id: 630738-001 S

Prep Method: SW5030B

Date Prep: 07.16.19

MSD Sample Id: 630738-001 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	0.0867	87	0.0974	98	70-130	12	35	mg/kg	07.17.19 08:26	
Toluene	<0.00200	0.100	0.0875	88	0.0996	100	70-130	13	35	mg/kg	07.17.19 08:26	
Ethylbenzene	<0.00200	0.100	0.0982	98	0.113	113	70-130	14	35	mg/kg	07.17.19 08:26	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.231	116	70-130	14	35	mg/kg	07.17.19 08:26	
o-Xylene	<0.00200	0.100	0.0956	96	0.110	110	70-130	14	35	mg/kg	07.17.19 08:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	07.17.19 08:26
4-Bromofluorobenzene	119		125		70-130	%	07.17.19 08:26

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

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

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

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



Chain of Custody

Work Order No:

630873

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915)585-3443 Lubbock, TX (806)/794-1296
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 281-1111

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Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	bbeiliii@ltenv.com

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

Project Name:							PLU 184 (2AP-4396 / 2A04347)					
Project Number:							012918039					
P.O. Number:												
Sampler's Name:							Benjamin Bellil					
Turn Around							Routine ☒					
Rush:												
Due Date:												
SAMPLE RECEIPT												
Temperature (°C):							Temp Blank: Yes No Wet Ice: Yes No					
Received Intact:							(Yes) No Thermometer ID TMM007					
Cooler Custody Seals:							Yes (No) N/A Correction Factor: -0.2					
Sample Custody Seals:							Yes (No) N/A Total Containers: 23					
Number of Containers												
PA 8015)												
EPA 0=8021)												
e (EPA 300.0)												
TAT starts the day received by the lab, if received by 4:30pm												
Work Order Notes												

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (%)	BTEX (%)	Chloride (%)
PB01	S	7/11/98	1215	2'	✓	X	X	X
PB01A			1250	10'	✓	X	X	X
PB01B			1320	16'	✓	X	X	X
PB01C			1340	22'	✓	X	X	X
PB02			1420	2'	✓	X	X	X
PB02A			1425	4'	✓	X	X	X
PB03			1435	2'	✓	X	X	X
PB03A	7/12/98 ↓		0925	14'	✓	X	X	X
PB03B	↑		0955	22'	✓	X	X	X
PB04	↑		1010	2'	✓	X	X	X

Office: 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.	
Total 200.7 / 6010 200.8 / 6020:	8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
<i>Circle Method(s) and Metal(s) to be analyzed</i>	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
	1631 / 245.1 / 7470 / 7474 : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		01/15/21 11:20			02/17/21 11:55

Work Order No: 630073

Page 1 of 1

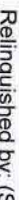
Work Order Comments									
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐									
State of Project:									
Reporting: Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐									
Deliverables: EDD ☐ ADaPT ☐ Other:									

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (E)	Chloride
PH04A	S	7/12/94	1020	4'	1	x	x	x
PH05			1035	2'		x	x	x
PH05A			1045	4'		x	x	x
PH06			1055	2'		x	x	x
PH06A			1100	4'		x	x	x
PH07			1110	2#		x	x	x
PH07A			1120	4'		x	x	x
PH08			1140	2'		x	x	x
PH08A			1150	4'		x	x	x
PH09	V		1305	2'	V	x	x	x

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

1031

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		07/15/2019 11:00			07/15/2019 11:55



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)

Chain of Custody

Work Order No:

630073

www.xenco.com

Page 3 of 3

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	bbeill@ltenv.com

Project Name:	PLU 184 (2AP-43962AP-4397)	Turn Around	☒ Routine
Project Number:	012918039	Rush:	
P.O. Number:		Due Date:	
Sampler's Name:	Benjamin Beill		

SAMPLE RECEIPT				Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):				Thermometer ID					
Received Intact:				Yes	No				
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	TPH (EP	BTEX (E	Chloride												Sample Comments
PH09A	S	7/12/19	1320	4'	1	X	X	X												
PH10			1335	2'		X	X	X												
PH10A	↓	↑	1340	4'	↓	X	X	X												
8013 7/12/19																				

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SIO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	6/15/2019 11:00	<i>[Signature]</i>	<i>[Signature]</i>	6/15/2019 11:55



Inter-Office Shipment

Page 1 of 3

IOS Number **43433**

Date/Time: 07/15/19 13:39

Created by: Martha Castro

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 814694170350

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630873-001	S	PH01	07/11/19 12:15	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-001	S	PH01	07/11/19 12:15	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630873-001	S	PH01	07/11/19 12:15	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630873-002	S	PH01A	07/11/19 12:50	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630873-002	S	PH01A	07/11/19 12:50	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630873-002	S	PH01A	07/11/19 12:50	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-003	S	PH01B	07/11/19 13:20	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630873-003	S	PH01B	07/11/19 13:20	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-003	S	PH01B	07/11/19 13:20	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630873-004	S	PH01C	07/11/19 13:40	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630873-004	S	PH01C	07/11/19 13:40	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-004	S	PH01C	07/11/19 13:40	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630873-005	S	PH02	07/11/19 14:20	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630873-005	S	PH02	07/11/19 14:20	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630873-005	S	PH02	07/11/19 14:20	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-006	S	PH02A	07/11/19 14:25	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630873-006	S	PH02A	07/11/19 14:25	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-006	S	PH02A	07/11/19 14:25	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630873-007	S	PH03	07/11/19 14:35	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/25/19	JKR	GRO-DRO PHCC10C28 PF	
630873-007	S	PH03	07/11/19 14:35	SW8021B	BTEX by EPA 8021B	07/19/19	07/25/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-007	S	PH03	07/11/19 14:35	E300_CL	Chloride by EPA 300	07/19/19	01/07/20	JKR	CL	
630873-008	S	PH03A	07/12/19 09:25	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-008	S	PH03A	07/12/19 09:25	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-008	S	PH03A	07/12/19 09:25	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-009	S	PH03B	07/12/19 09:55	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	

IOS Number **43433**

Date/Time: 07/15/19 13:39

Created by: Martha Castro

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 814694170350

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630873-009	S	PH03B	07/12/19 09:55	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-009	S	PH03B	07/12/19 09:55	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-010	S	PH04	07/12/19 10:10	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-010	S	PH04	07/12/19 10:10	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-010	S	PH04	07/12/19 10:10	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-011	S	PH04A	07/12/19 10:20	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-011	S	PH04A	07/12/19 10:20	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-011	S	PH04A	07/12/19 10:20	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-012	S	PH05	07/12/19 10:35	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-012	S	PH05	07/12/19 10:35	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-012	S	PH05	07/12/19 10:35	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-013	S	PH05A	07/12/19 10:45	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-013	S	PH05A	07/12/19 10:45	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-013	S	PH05A	07/12/19 10:45	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-014	S	PH06	07/12/19 10:55	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-014	S	PH06	07/12/19 10:55	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-014	S	PH06	07/12/19 10:55	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-015	S	PH06A	07/12/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-015	S	PH06A	07/12/19 11:00	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-015	S	PH06A	07/12/19 11:00	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-016	S	PH07	07/12/19 11:10	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-016	S	PH07	07/12/19 11:10	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-016	S	PH07	07/12/19 11:10	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-017	S	PH07A	07/12/19 11:20	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-017	S	PH07A	07/12/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	

Inter Office Shipment or Sample Comments:



Inter-Office Shipment

Page 3 of 3

IOS Number **43433**

Date/Time: 07/15/19 13:39

Created by: Martha Castro

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 814694170350

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630873-017	S	PH07A	07/12/19 11:20	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-018	S	PH08	07/12/19 11:40	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-018	S	PH08	07/12/19 11:40	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-018	S	PH08	07/12/19 11:40	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-019	S	PH08A	07/12/19 11:50	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-019	S	PH08A	07/12/19 11:50	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-019	S	PH08A	07/12/19 11:50	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-020	S	PH09	07/12/19 13:05	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-020	S	PH09	07/12/19 13:05	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-020	S	PH09	07/12/19 13:05	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-021	S	PH09A	07/12/19 13:20	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-021	S	PH09A	07/12/19 13:20	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-021	S	PH09A	07/12/19 13:20	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-022	S	PH10	07/12/19 13:35	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	
630873-022	S	PH10	07/12/19 13:35	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-022	S	PH10	07/12/19 13:35	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-023	S	PH10A	07/12/19 13:40	E300_CL	Chloride by EPA 300	07/19/19	01/08/20	JKR	CL	
630873-023	S	PH10A	07/12/19 13:40	SW8015MOD_NM	TPH by SW8015 Mod	07/19/19	07/26/19	JKR	GRO-DRO PHCC10C28 PF	
630873-023	S	PH10A	07/12/19 13:40	SW8021B	BTEX by EPA 8021B	07/19/19	07/26/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Date Relinquished:

Martha Castro

07/15/2019

Received By:

Date Received:

Brianna Teel

Cooler Temperature:

07/16/2019 13:06

0.3



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 43433

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Martha Castro

Date Sent: 07/15/2019 01:39 PM

Received By: Brianna Teel

Date Received: 07/16/2019 01:06 PM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 07/16/2019



Client: LT Environmental, Inc.

Date/ Time Received: 07/15/2019 11:55:00 AM

Work Order #: 630873

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T NM 007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Martha Castro

Date: 07/15/2019

Checklist reviewed by:

Jessica Kramer

Date: 07/16/2019

Analytical Report 631065

for
LT Environmental, Inc.

Project Manager: Dan Moir
PLU 184 (2RP-4397, 2RP-4396)

012918039

25-JUL-19

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

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

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

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



25-JUL-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **631065**

PLU 184 (2RP-4397, 2RP-4396)

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 631065. 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. 631065 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

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**Sample Cross Reference 631065****LT Environmental, Inc., Arvada, CO**

PLU 184 (2RP-4397, 2RP-4396)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	07-16-19 09:30	2 ft	631065-001
BH01A	S	07-16-19 09:40	4 ft	631065-002
BH02	S	07-16-19 10:05	2 ft	631065-003
BH02A	S	07-16-19 10:15	4 ft	631065-004
BH03	S	07-16-19 10:30	2 ft	631065-005
BH03A	S	07-16-19 10:40	4 ft	631065-006
BH04	S	07-16-19 10:50	2 ft	631065-007
BH04A	S	07-16-19 11:00	4 ft	631065-008



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 184 (2RP-4397, 2RP-4396)

Project ID: 012918039
Work Order Number(s): 631065

Report Date: 25-JUL-19
Date Received: 07/16/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3095990 BTEX by EPA 8021B

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

Certificate of Analysis Summary 631065



LT Environmental, Inc., Arvada, CO

Project Name: PLU 184 (2RP-4397, 2RP-4396)

Project Id: 012918039
 Contact: Dan Moir
 Project Location: Delaware Basin

Date Received in Lab: Tue Jul-16-19 02:25 pm
 Report Date: 25-JUL-19
 Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	631065-001	631065-002	631065-003	631065-004	631065-005	631065-006
	<i>Field Id:</i>	BH01	BH01A	BH02	BH02A	BH03	BH03A
	<i>Depth:</i>	2- ft	4- ft	2- ft	4- ft	2- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-16-19 09:30	Jul-16-19 09:40	Jul-16-19 10:05	Jul-16-19 10:15	Jul-16-19 10:30	Jul-16-19 10:40
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-21-19 16:00	Jul-21-19 16:00	Jul-21-19 16:00	Jul-21-19 16:00	Jul-21-19 16:00	Jul-21-19 16:00
	<i>Analyzed:</i>	Jul-22-19 04:53	Jul-22-19 05:14	Jul-22-19 05:34	Jul-22-19 05:54	Jul-22-19 06:14	Jul-22-19 06:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00400 0.00400	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-18-19 16:10	Jul-18-19 16:10	Jul-18-19 16:10	Jul-18-19 16:10	Jul-18-19 16:10	Jul-18-19 16:10
	<i>Analyzed:</i>	Jul-19-19 04:13	Jul-19-19 04:19	Jul-19-19 04:25	Jul-19-19 04:32	Jul-19-19 04:38	Jul-19-19 04:44
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		15.4 5.01	98.5 4.95	38.4 5.05	37.4 4.98	155 5.00	132 5.05
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-24-19 08:00	Jul-24-19 08:00	Jul-24-19 08:00	Jul-24-19 08:00	Jul-24-19 08:00	Jul-24-19 08:00
	<i>Analyzed:</i>	Jul-24-19 12:08	Jul-24-19 13:19	Jul-24-19 13:43	Jul-24-19 14:07	Jul-24-19 14:30	Jul-24-19 14:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer
 Project Assistant



Certificate of Analysis Summary 631065

LT Environmental, Inc., Arvada, CO

Project Name: PLU 184 (2RP-4397, 2RP-4396)

Project Id: 012918039
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-16-19 02:25 pm
Report Date: 25-JUL-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	631065-007	631065-008				
	Field Id:	BH04	BH04A				
	Depth:	2- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jul-16-19 10:50	Jul-16-19 11:00				
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jul-21-19 16:00	Jul-21-19 16:00				
	Analyzed:	Jul-22-19 06:55	Jul-22-19 07:15				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00198 0.00198	<0.00200 0.00200				
Toluene		<0.00198 0.00198	<0.00200 0.00200				
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200				
m,p-Xylenes		<0.00397 0.00397	<0.00399 0.00399				
o-Xylene		<0.00198 0.00198	<0.00200 0.00200				
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200				
Total BTEX		<0.00198 0.00198	<0.00200 0.00200				
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jul-18-19 16:35	Jul-18-19 16:35				
	Analyzed:	Jul-18-19 17:24	Jul-18-19 17:40				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		15.8 5.00	53.8 4.97				
TPH by SW8015 Mod SUB: T104704400-18-16	Extracted:	Jul-24-19 08:00	Jul-24-19 08:00				
	Analyzed:	Jul-24-19 15:17	Jul-24-19 15:41				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0				
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<15.0 15.0				
Total TPH		<14.9 14.9	<15.0 15.0				
Total GRO-DRO		<14.9 14.9	<15.0 15.0				

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH01**
Lab Sample Id: 631065-001

Matrix: Soil
Date Collected: 07.16.19 09.30

Date Received: 07.16.19 14.25
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095826

Date Prep: 07.18.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.4	5.01	mg/kg	07.19.19 04.13		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096438

Date Prep: 07.24.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 12.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.24.19 12.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.24.19 12.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.24.19 12.08	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.24.19 12.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	07.24.19 12.08	
o-Terphenyl	84-15-1	109	%	70-135	07.24.19 12.08	



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH01**
Lab Sample Id: 631065-001

Matrix: Soil
Date Collected: 07.16.19 09.30

Date Received: 07.16.19 14.25
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3095990

Prep Method: SW5030B

% Moisture:

Date Prep: 07.21.19 16.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.19 04.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.22.19 04.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.22.19 04.53	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.22.19 04.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.22.19 04.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.22.19 04.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.22.19 04.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.22.19 04.53		
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.22.19 04.53		



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH01A**
Lab Sample Id: 631065-002

Matrix: Soil
Date Collected: 07.16.19 09.40

Date Received: 07.16.19 14.25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095826

Date Prep: 07.18.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	98.5	4.95	mg/kg	07.19.19 04.19		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096438

Date Prep: 07.24.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 13.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.24.19 13.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.24.19 13.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.24.19 13.19	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.24.19 13.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	07.24.19 13.19	
o-Terphenyl	84-15-1	114	%	70-135	07.24.19 13.19	



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH01A**
Lab Sample Id: 631065-002

Matrix: Soil
Date Collected: 07.16.19 09.40

Date Received: 07.16.19 14.25
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3095990

Prep Method: SW5030B

% Moisture:

Date Prep: 07.21.19 16.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.22.19 05.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.22.19 05.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.22.19 05.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.22.19 05.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.22.19 05.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.22.19 05.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.22.19 05.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	07.22.19 05.14		
4-Bromofluorobenzene	460-00-4	114	%	70-130	07.22.19 05.14		



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH02**
Lab Sample Id: 631065-003

Matrix: Soil
Date Collected: 07.16.19 10.05

Date Received: 07.16.19 14.25
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095826

Date Prep: 07.18.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38.4	5.05	mg/kg	07.19.19 04.25		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096438

Date Prep: 07.24.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.24.19 13.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.24.19 13.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.24.19 13.43	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.24.19 13.43	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.24.19 13.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	07.24.19 13.43	
o-Terphenyl	84-15-1	107	%	70-135	07.24.19 13.43	



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH02**
Lab Sample Id: 631065-003

Matrix: Soil
Date Collected: 07.16.19 10.05

Date Received: 07.16.19 14.25
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3095990

Prep Method: SW5030B

% Moisture:

Date Prep: 07.21.19 16.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.19 05.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.22.19 05.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.22.19 05.34	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.22.19 05.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.22.19 05.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.22.19 05.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.22.19 05.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.22.19 05.34		
4-Bromofluorobenzene	460-00-4	108	%	70-130	07.22.19 05.34		



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH02A**
Lab Sample Id: 631065-004

Matrix: Soil
Date Collected: 07.16.19 10.15

Date Received: 07.16.19 14.25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095826

Date Prep: 07.18.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.4	4.98	mg/kg	07.19.19 04.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096438

Date Prep: 07.24.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 14.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.24.19 14.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.24.19 14.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.24.19 14.07	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.24.19 14.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	07.24.19 14.07	
o-Terphenyl	84-15-1	105	%	70-135	07.24.19 14.07	



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH02A**
Lab Sample Id: 631065-004

Matrix: Soil
Date Collected: 07.16.19 10.15

Date Received: 07.16.19 14.25
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3095990

Prep Method: SW5030B

% Moisture:

Date Prep: 07.21.19 16.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.22.19 05.54	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.22.19 05.54	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.22.19 05.54	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.22.19 05.54	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.22.19 05.54	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.22.19 05.54	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.22.19 05.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.22.19 05.54		
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.22.19 05.54		



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH03**
Lab Sample Id: 631065-005

Matrix: Soil
Date Collected: 07.16.19 10.30

Date Received: 07.16.19 14.25
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095826

Date Prep: 07.18.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	155	5.00	mg/kg	07.19.19 04.38		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096438

Date Prep: 07.24.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 14.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.24.19 14.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.24.19 14.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.24.19 14.30	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.24.19 14.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	07.24.19 14.30	
o-Terphenyl	84-15-1	109	%	70-135	07.24.19 14.30	



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH03**
Lab Sample Id: 631065-005

Matrix: Soil
Date Collected: 07.16.19 10.30

Date Received: 07.16.19 14.25
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3095990

Prep Method: SW5030B

% Moisture:

Date Prep: 07.21.19 16.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.19 06.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.22.19 06.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.22.19 06.14	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.22.19 06.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.22.19 06.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.22.19 06.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.22.19 06.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.22.19 06.14		
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.22.19 06.14		



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH03A**
Lab Sample Id: 631065-006

Matrix: Soil
Date Collected: 07.16.19 10.40

Date Received: 07.16.19 14.25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095826

Date Prep: 07.18.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	132	5.05	mg/kg	07.19.19 04.44		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096438

Date Prep: 07.24.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 14.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.24.19 14.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.24.19 14.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.24.19 14.54	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.24.19 14.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	07.24.19 14.54	
o-Terphenyl	84-15-1	114	%	70-135	07.24.19 14.54	



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH03A**
Lab Sample Id: 631065-006

Matrix: Soil
Date Collected: 07.16.19 10.40

Date Received: 07.16.19 14.25
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3095990

Prep Method: SW5030B

% Moisture:

Date Prep: 07.21.19 16.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.19 06.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.22.19 06.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.22.19 06.34	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.22.19 06.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.22.19 06.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.22.19 06.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.22.19 06.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	07.22.19 06.34		
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.22.19 06.34		



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH04**
Lab Sample Id: 631065-007

Matrix: Soil
Date Collected: 07.16.19 10.50

Date Received: 07.16.19 14.25
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095835

Date Prep: 07.18.19 16.35

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.8	5.00	mg/kg	07.18.19 17.24		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096438

Date Prep: 07.24.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.24.19 15.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.24.19 15.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.24.19 15.17	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.24.19 15.17	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.24.19 15.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	07.24.19 15.17	
o-Terphenyl	84-15-1	109	%	70-135	07.24.19 15.17	



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH04**
Lab Sample Id: 631065-007

Matrix: Soil
Date Collected: 07.16.19 10.50

Date Received: 07.16.19 14.25
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3095990

Prep Method: SW5030B

% Moisture:

Date Prep: 07.21.19 16.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.22.19 06.55	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.22.19 06.55	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.22.19 06.55	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.22.19 06.55	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.22.19 06.55	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.22.19 06.55	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.22.19 06.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	07.22.19 06.55		
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.22.19 06.55		



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH04A**
Lab Sample Id: 631065-008

Matrix: Soil
Date Collected: 07.16.19 11.00

Date Received: 07.16.19 14.25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3095835

Date Prep: 07.18.19 16.35

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	53.8	4.97	mg/kg	07.18.19 17.40		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096438

Date Prep: 07.24.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 15.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.24.19 15.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.24.19 15.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.24.19 15.41	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.24.19 15.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	07.24.19 15.41	
o-Terphenyl	84-15-1	99	%	70-135	07.24.19 15.41	



Certificate of Analytical Results 631065

LT Environmental, Inc., Arvada, CO

PLU 184 (2RP-4397, 2RP-4396)

Sample Id: **BH04A**
Lab Sample Id: 631065-008

Matrix: Soil
Date Collected: 07.16.19 11.00

Date Received: 07.16.19 14.25
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3095990

Prep Method: SW5030B

% Moisture:

Date Prep: 07.21.19 16.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.19 07.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.22.19 07.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.22.19 07.15	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.22.19 07.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.22.19 07.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.22.19 07.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.22.19 07.15	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112		%	70-130	07.22.19 07.15	
1,4-Difluorobenzene	540-36-3	102		%	70-130	07.22.19 07.15	



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.
PLU 184 (2RP-4397, 2RP-4396)

Analytical Method: Chloride by EPA 300

Seq Number: 3095826

MB Sample Id: 7682330-1-BLK

Matrix: Solid

LCS Sample Id: 7682330-1-BKS

Prep Method: E300P

Date Prep: 07.18.19

LCSD Sample Id: 7682330-1-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	255	102	255	102	90-110	0	20	mg/kg	07.19.19 01:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3095835

MB Sample Id: 7682332-1-BLK

Matrix: Solid

LCS Sample Id: 7682332-1-BKS

Prep Method: E300P

Date Prep: 07.18.19

LCSD Sample Id: 7682332-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	253	101	261	104	90-110	3	20	mg/kg	07.18.19 17:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3095826

Parent Sample Id: 631037-004

Matrix: Soil

MS Sample Id: 631037-004 S

Prep Method: E300P

Date Prep: 07.18.19

MSD Sample Id: 631037-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	110	250	357	99	356	98	90-110	0	20	mg/kg	07.19.19 03:29	

Analytical Method: Chloride by EPA 300

Seq Number: 3095826

Parent Sample Id: 631095-005

Matrix: Soil

MS Sample Id: 631095-005 S

Prep Method: E300P

Date Prep: 07.18.19

MSD Sample Id: 631095-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1290	252	1440	60	1440	60	90-110	0	20	mg/kg	07.19.19 01:58	X

Analytical Method: Chloride by EPA 300

Seq Number: 3095835

Parent Sample Id: 631065-007

Matrix: Soil

MS Sample Id: 631065-007 S

Prep Method: E300P

Date Prep: 07.18.19

MSD Sample Id: 631065-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.8	250	269	101	278	105	90-110	3	20	mg/kg	07.18.19 17:29	

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = 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.
PLU 184 (2RP-4397, 2RP-4396)

Analytical Method: Chloride by EPA 300

Seq Number: 3095835

Parent Sample Id: 631149-020

Matrix: Soil

MS Sample Id: 631149-020 S

Prep Method: E300P

Date Prep: 07.18.19

MSD Sample Id: 631149-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	98.1	253	362	104	386	114	90-110	6	20	mg/kg	07.18.19 18:44	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3096438

MB Sample Id: 7682725-1-BLK

Matrix: Solid

LCS Sample Id: 7682725-1-BKS

Prep Method: TX1005P

Date Prep: 07.24.19

LCSD Sample Id: 7682725-1-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	959	96	988	99	70-135	3	20	mg/kg	07.24.19 11:21	
Diesel Range Organics (DRO)	<8.13	1000	1060	106	1100	110	70-135	4	20	mg/kg	07.24.19 11:21	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		93		91		70-135	%	07.24.19 11:21
o-Terphenyl	92		99		101		70-135	%	07.24.19 11:21

Analytical Method: TPH by SW8015 Mod

Seq Number: 3096438

Parent Sample Id: 631065-001

Matrix: Soil

MS Sample Id: 631065-001 S

Prep Method: TX1005P

Date Prep: 07.24.19

MSD Sample Id: 631065-001 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)	9.48	997	993	99	1050	104	70-135	6	20	mg/kg	07.24.19 12:32	
Diesel Range Organics (DRO)	11.0	997	1110	110	1170	116	70-135	5	20	mg/kg	07.24.19 12:32	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		99		70-135	%	07.24.19 12:32
o-Terphenyl	99		104		70-135	%	07.24.19 12:32

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

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

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

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



LT Environmental, Inc.
PLU 184 (2RP-4397, 2RP-4396)

Analytical Method: BTEX by EPA 8021B

Seq Number: 3095990

MB Sample Id: 7682452-1-BLK

Matrix: Solid

LCS Sample Id: 7682452-1-BKS

Prep Method: SW5030B

Date Prep: 07.21.19

LCSD Sample Id: 7682452-1-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	0.107	107	0.103	103	70-130	4	35	mg/kg	07.22.19 02:44	
Toluene	<0.00200	0.100	0.104	104	0.101	101	70-130	3	35	mg/kg	07.22.19 02:44	
Ethylbenzene	<0.00200	0.100	0.118	118	0.115	115	70-130	3	35	mg/kg	07.22.19 02:44	
m,p-Xylenes	<0.00400	0.200	0.243	122	0.236	118	70-130	3	35	mg/kg	07.22.19 02:44	
o-Xylene	<0.00200	0.100	0.114	114	0.115	115	70-130	1	35	mg/kg	07.22.19 02:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		91		101		70-130	%	07.22.19 02:44
4-Bromofluorobenzene	99		100		122		70-130	%	07.22.19 02:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3095990

Parent Sample Id: 631065-001

Matrix: Soil

MS Sample Id: 631065-001 S

Prep Method: SW5030B

Date Prep: 07.21.19

MSD Sample Id: 631065-001 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	0.102	102	0.0940	94	70-130	8	35	mg/kg	07.22.19 03:24	
Toluene	<0.00200	0.100	0.0988	99	0.0930	93	70-130	6	35	mg/kg	07.22.19 03:24	
Ethylbenzene	<0.00200	0.100	0.111	111	0.106	106	70-130	5	35	mg/kg	07.22.19 03:24	
m,p-Xylenes	<0.00400	0.200	0.228	114	0.217	109	70-130	5	35	mg/kg	07.22.19 03:24	
o-Xylene	<0.00200	0.100	0.111	111	0.104	104	70-130	7	35	mg/kg	07.22.19 03:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		103		70-130	%	07.22.19 03:24
4-Bromofluorobenzene	126		120		70-130	%	07.22.19 03:24

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

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

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

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



Chain of Custody

Work Order No: 631065

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

www.xenco.com

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	bbell@ltenv.com

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

Project Name:	PLU 18412 (AP-4397, 281-4396)	Turn Around	☒ Routine
Project Number:	012918039	Rush:	☐
P.O. Number:		Due Date:	
Sampler's Name:	Benjamin Beill		

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride	Sample Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
BH01		5	7/16/19	0930	2'	1	X	X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				</

Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Pb Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg	Relinquished by: (Signature) <u>[Signature]</u> Received by: (Signature) <u>[Signature]</u> Date/Time <u>7/16/19 @ 14:25</u>	Relinquished by: (Signature) <u>[Signature]</u> Received by: (Signature) <u>[Signature]</u> Date/Time <u>7/16/19 @ 14:25</u>
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Inter-Office Shipment

Page 1 of 2

IOS Number **43561**

Date/Time: 07/16/19 15:56

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 775757275926

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
631065-001	S	BH01	07/16/19 09:30	SW8015MOD_NM	TPH by SW8015 Mod	07/22/19	07/30/19	JKR	GRO-DRO PHCC10C28 PF	
631065-001	S	BH01	07/16/19 09:30	SW8021B	BTEX by EPA 8021B	07/22/19	07/30/19	JKR	BR4FBZ BZ BZME EBZ X	
631065-001	S	BH01	07/16/19 09:30	E300_CL	Chloride by EPA 300	07/22/19	01/12/20	JKR	CL	
631065-002	S	BH01A	07/16/19 09:40	E300_CL	Chloride by EPA 300	07/22/19	01/12/20	JKR	CL	
631065-002	S	BH01A	07/16/19 09:40	SW8015MOD_NM	TPH by SW8015 Mod	07/22/19	07/30/19	JKR	GRO-DRO PHCC10C28 PF	
631065-002	S	BH01A	07/16/19 09:40	SW8021B	BTEX by EPA 8021B	07/22/19	07/30/19	JKR	BR4FBZ BZ BZME EBZ X	
631065-003	S	BH02	07/16/19 10:05	E300_CL	Chloride by EPA 300	07/22/19	01/12/20	JKR	CL	
631065-003	S	BH02	07/16/19 10:05	SW8021B	BTEX by EPA 8021B	07/22/19	07/30/19	JKR	BR4FBZ BZ BZME EBZ X	
631065-003	S	BH02	07/16/19 10:05	SW8015MOD_NM	TPH by SW8015 Mod	07/22/19	07/30/19	JKR	GRO-DRO PHCC10C28 PF	
631065-004	S	BH02A	07/16/19 10:15	E300_CL	Chloride by EPA 300	07/22/19	01/12/20	JKR	CL	
631065-004	S	BH02A	07/16/19 10:15	SW8015MOD_NM	TPH by SW8015 Mod	07/22/19	07/30/19	JKR	GRO-DRO PHCC10C28 PF	
631065-004	S	BH02A	07/16/19 10:15	SW8021B	BTEX by EPA 8021B	07/22/19	07/30/19	JKR	BR4FBZ BZ BZME EBZ X	
631065-005	S	BH03	07/16/19 10:30	SW8015MOD_NM	TPH by SW8015 Mod	07/22/19	07/30/19	JKR	GRO-DRO PHCC10C28 PF	
631065-005	S	BH03	07/16/19 10:30	SW8021B	BTEX by EPA 8021B	07/22/19	07/30/19	JKR	BR4FBZ BZ BZME EBZ X	
631065-005	S	BH03	07/16/19 10:30	E300_CL	Chloride by EPA 300	07/22/19	01/12/20	JKR	CL	
631065-006	S	BH03A	07/16/19 10:40	E300_CL	Chloride by EPA 300	07/22/19	01/12/20	JKR	CL	
631065-006	S	BH03A	07/16/19 10:40	SW8021B	BTEX by EPA 8021B	07/22/19	07/30/19	JKR	BR4FBZ BZ BZME EBZ X	
631065-006	S	BH03A	07/16/19 10:40	SW8015MOD_NM	TPH by SW8015 Mod	07/22/19	07/30/19	JKR	GRO-DRO PHCC10C28 PF	
631065-007	S	BH04	07/16/19 10:50	E300_CL	Chloride by EPA 300	07/22/19	01/12/20	JKR	CL	
631065-007	S	BH04	07/16/19 10:50	SW8021B	BTEX by EPA 8021B	07/22/19	07/30/19	JKR	BR4FBZ BZ BZME EBZ X	
631065-007	S	BH04	07/16/19 10:50	SW8015MOD_NM	TPH by SW8015 Mod	07/22/19	07/30/19	JKR	GRO-DRO PHCC10C28 PF	
631065-008	S	BH04A	07/16/19 11:00	E300_CL	Chloride by EPA 300	07/22/19	01/12/20	JKR	CL	
631065-008	S	BH04A	07/16/19 11:00	SW8021B	BTEX by EPA 8021B	07/22/19	07/30/19	JKR	BR4FBZ BZ BZME EBZ X	
631065-008	S	BH04A	07/16/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	07/22/19	07/30/19	JKR	GRO-DRO PHCC10C28 PF	



Inter-Office Shipment

Page 2 of 2

IOS Number 43561

Date/Time: 07/16/19 15:56

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 775757275926

E-Mail: jessica.kramer@xenco.com

Inter Office Shipment or Sample Comments:

Relinquished By:

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

Elizabeth McClellan

Date Relinquished: 07/16/2019

Received By:

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

Brianna Teel

Date Received: 07/17/2019 11:51

Cooler Temperature: 0.3



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 43561

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 07/16/2019 03:56 PM

Received By: Brianna Teel

Date Received: 07/17/2019 11:51 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 07/17/2019



Client: LT Environmental, Inc.

Date/ Time Received: 07/16/2019 02:25:00 PM

Work Order #: 631065

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)?	5.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes Subbed to Xenco Midland
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 07/16/2019

Checklist reviewed by:

Jessica Kramer

Date: 07/17/2019

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 234321

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 234321
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	7/3/2023