

October 19, 2018

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

**RE: Closure Request
ND 19 Federal SWD No. 001
Remediation Permit Number 2RP-2663
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), is pleased to present the following letter report detailing the excavation of impacted soil and confirmation soil sampling activities at the ND 19 Federal SWD No. 001 (Site) in Unit A, Section 19, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impact to soil after a flex gasket on the wellhead failed, causing approximately 226 barrels (bbls) of produced water to release onto the surface of the well pad and adjacent pasture. The release impacted approximately 15,300 square feet of well pad and 4,000 square feet of pasture. Approximately 85 bbls of free-standing fluid was recovered with a vacuum truck. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on December 15, 2014, and was assigned Remediation Permit Number (RP) 2RP-2663 (Attachment 1). Although the 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. Based on the results of the confirmation soil sampling activities, XTO is requesting no further action for this release.

BACKGROUND

The release and remediation occurred prior to August 14, 2018; therefore, LTE ranked the Site according to criteria in the NMOCD 1993 *Guidelines for Leaks, Spills, and Releases*. The site ranking determined appropriate cleanup standards. 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 and known aquifer properties. The nearest permitted water well is C 02109, located approximately 0.44 miles south of the Site, with a depth to groundwater of 150 feet bgs and a total depth of 130 feet bgs. The well is approximately 19 feet lower in elevation than the Site. The closest surface water to the Site is an unnamed arroyo located approximately 257 feet southeast of the Site. Based on these criteria, the NMOCD site ranking for remediation action



levels is 10, and the following remediation action levels apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); and 1,000 mg/kg total petroleum hydrocarbons (TPH). Based on standard practice in the region at the time of the release, LTE applied a site-specific chloride action level of 600 mg/kg.

SOIL SAMPLING

On February 5, 2018, an LTE scientist collected five preliminary soil samples (SS1 through SS5) to assess the lateral extent of soil impacts. Soil sample SS1 was collected from the surface of the well pad near the wellhead release point. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, soil samples SS2 through SS5 were collected from each sample location at approximately 0.5 feet bgs. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141 and field observations. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, and method of analysis and immediately placed on ice. The samples were delivered at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories in Midland, Texas, for laboratory analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by USEPA Method SW8015 Modified, and chloride by USEPA Method 300.0.

Laboratory analytical results for preliminary surface soil sample SS1 indicated the chloride concentration exceeded the NMOCD remediation action level at a concentration of 2,360 mg/kg. Laboratory analytical results for preliminary soil samples SS2 through SS5 indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD site-specific remediation action levels. Laboratory analytical results are summarized in Table 1 and the laboratory analytical report is included in Attachment 2. Based on the soil sample laboratory analytical results, excavation of impacted soil was required.

EXCAVATION ACTIVITIES

During August and September 2018, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by field screening and laboratory analytical results exceeding the NMOCD remediation action level for chloride in preliminary soil sample SS1. Excavation activities commenced on August 30, 2018, and concluded on September 20, 2018. To delineate hydrocarbon and chloride impacts to soil and direct excavation activities, LTE screened soil samples using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. Upon completing excavation activities, LTE collected excavation sidewall soil samples (SW01 through SW16) from a depth of 2-feet bgs and excavation floor soil samples (FS01 through FS09) from a depth of 4-feet bgs. While on site for excavation activities, LTE collected four additional surface soil samples (SS06 through SS09) to confirm the extent of the release. The soil samples were



collected, handled, and analyzed as previously described and submitted to Xenco Laboratories in Midland, Texas.

The final excavation measured approximately 24,240 square feet with a depth of 4 feet bgs throughout the excavation. Approximately 3,486 cubic yards of soil were removed from the excavation. The impacted soil was transported and properly disposed of at the R360 Landfill in Red Bluff, New Mexico. The final excavation extent and soil sample locations are illustrated on Figure 2.

ANALYTICAL RESULTS

Laboratory analytical results for the confirmation surface soil samples (SS2 through SS5 and SS06 through SSS09) indicated that BTEX, TPH, and chloride concentrations were compliant with NMOCD remediation action levels and no excavation was required in these areas. Excavation activities commenced in the vicinity of preliminary surface soil sample SS1 based on laboratory analytical results exceeding the NMOCD remediation action level for chloride. Laboratory analytical results for the final excavation sidewall soil samples (SW01 through SW10 and SW13 through SW16) and final excavation floor soil samples (FS01 through FS04, FS07 through FS09) indicated that BTEX, TPH, and chloride concentrations were compliant with NMOCD remediation action levels.

Laboratory analytical results for the excavation sidewall samples (SW11 and SW12) and excavation floor samples (FS05 and FS06) collected in close proximity to the wellhead indicated that chloride concentrations exceeded the NMOCD remediation action level. XTO's safety policy restricts soil disturbing activities within a 10-foot radius of a wellhead. This safety policy is established to protect workers and to reduce the likelihood of compromising the integrity of the wellbore. This policy had to be enforced where impacted soil was identified within ten feet of the wellhead. The excavation was advanced to ten feet from the wellhead by hydro-vacuum to remove as much impacted soil as possible. Laboratory analytical results for soil samples SW11, SW12, FS05, and FS06 indicate that soil exceeding the NMOCD remediation action level for chloride was left in-place near the wellhead. Laboratory analytical results are summarized in Table 1, and the complete laboratory analytical reports are included in Attachment 2.

CONCLUSIONS

Laboratory analytical results for the final confirmation surface soil samples and final excavation soil samples indicate that BTEX, TPH, and chloride concentrations are compliant with NMOCD site-specific remediation action levels, with the exception of excavation sidewall samples SW11 and SW12 and excavation floor samples FS05 and FS06. Impacted soil was left in-place within 10 feet of the wellhead per XTO's safety policy as described above. The remaining impacted soil will be addressed when the Site is closed to allow for remediation to be completed safely.





Initial response efforts, natural degradation, and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for release number 2RP-2663 until final reclamation, at which time the impacted soil left in place around the wellhead will be addressed. Upon approval of this request, XTO will backfill the excavation with caliche well pad material. An updated NMOCD Form C-141 is included in Attachment 1. A photographic log of the Site is included as Attachment 3.

If you have any questions or comments, please do not hesitate to contact Ms. Adrian Baker at (432) 887-1255 or abaker@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads "Adrian Baker".

Adrian Baker
Project Geologist

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

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Maria Pruett, NMOCD
Jim Amos, BLM
Shelly Tucker, BLM

Attachments:

Figure 1 Site Location Map
Figure 2 Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Initial/Final NMOCD Form C-141
Attachment 2 Laboratory Analytical Reports
Attachment 3 Photographic Log

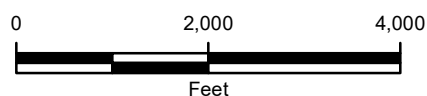




LEGEND

○ SITE LOCATION

IMAGE COURTESY OF ESRI/USGS



NOTE: REMEDIATION PERMIT
NUMBER 2RP-2663

FIGURE 1
SITE LOCATION MAP
ND 19 FEDERAL SWD NO. 001
UNIT A SEC 19 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





LEGEND

- PRELIMINARY SOIL SAMPLE
- FINAL CONFIRMATION SOIL SAMPLE
- EXCAVATION EXTENT

NOTE: REMEDIATION PERMIT NUMBER 2RP-2663

IMAGE COURTESY OF GOOGLE EARTH 2017

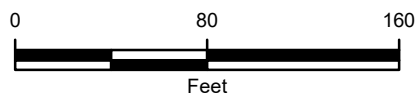


FIGURE 2
SOIL SAMPLE LOCATIONS
 ND 19 FEDERAL SWD NO. 001
 UNIT A SEC 19 T24S R30E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



TABLE 1
SOIL ANALYTICAL RESULTS
ND 19 FEDERAL SWD NO. 001
REMEDIATION PERMIT NUMBER 2RP-2663
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS1	Surface	02/05/2018	<0.00382	<0.00382	<0.00382	<0.00382	<0.00382	<15.0	103	18.9	103	122	2,360
SS2	0.5	02/05/2018	<0.00351	<0.00351	<0.00351	<0.00351	<0.00351	<15.0	<15.0	<15.0	<15.0	<15.0	9.76
SS3	0.5	02/05/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	37.7	<15.0	37.7	37.7	137
SS4	0.5	02/05/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	10.9
SS5	0.5	02/05/2018	<0.00357	<0.00357	<0.00357	<0.00357	<0.00357	<14.9	<14.9	<14.9	<14.9	<14.9	147
FS01	4	09/05/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	212
SW01	2	09/05/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	172
SW02	2	09/05/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	12.7
SW03	2	09/05/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	70.3
FS02	4	09/10/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	149
SW04	2	09/10/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	416
SW05	2	09/11/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	17.1	<15.0	17.1	17.1	16.0
SW06	2	09/11/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	17.8	<15.0	17.8	17.8	132
FS03	4	09/12/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	572
SW07	2	09/12/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	308
SW08	2	09/12/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
FS04	4	09/14/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	379
FS05	4	09/14/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	851
FS06	4	09/14/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,260
SW09	2	09/14/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	10.4
SW10	2	09/14/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	70.0
SW11	2	09/14/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,160
SW12	2	09/14/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	703
FS07	4	09/17/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	381
FS08	4	09/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	229
SW13	2	09/17/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	355
SW14	2	09/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	143
SW15	2	09/17/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	39.3



TABLE 1 (Continued)
SOIL ANALYTICAL RESULTS
ND 19 FEDERAL SWD NO. 001
REMEDIATION PERMIT NUMBER 2RP-2663
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SW16	2	09/17/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	284
FS09	4	09/20/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	272
SS06	0.5	09/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	79.6
SS07	0.5	09/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	14.8
SS08	0.5	09/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
SS09	0.5	09/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.97
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	NE	1,000	600

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold - indicates result exceeds the applicable regulatory standard.



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

NAB1435037409		OPERATOR		☒ Initial Report	☐ Final Report
Name of Company: BOPCO, L.P.		Contact: Tony Savoie			
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 575-887-7329			
Facility Name: ND 19 Federal SWD No.001		Facility Type: Exploration and Production			
Surface Owner: Federal		Mineral Owner: Federal		API No. 30-015-39713	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	19	24S	30E	516	North	705	East	Eddy

Latitude N 32.208897 Longitude W 103.914495

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 226 bbls.	Volume Recovered: 85 bbls.
Source of Release: Flex gasket on wellhead	Date and Hour of Occurrence: 12/3/14 at approximately 7:30 am	Date and Hour of Discovery: 12/3/14 at approximately 7:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher NMOCD	
By Whom? Bradley Blevins	Date and Hour: 12/13/14 at approximately 4:00 p.m. <u>3:25 PM</u>	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse	

NM OIL CONSERVATION
ARTESIA DISTRICT

If a Watercourse was Impacted, Describe Fully.*

15 2014

RECEIVED

Describe Cause of Problem and Remedial Action Taken.*

A flex gasket on the wellhead failed releasing produced water on the well pad. All of the free standing fluid was recovered and the gasket was replaced.

Describe Area Affected and Cleanup Action Taken.*

The spill impacted approximately 15,300 sq.ft. of caliche well pad and approximately 4,000 sq.ft. pasture area. The impacted area was left as is pending final remediation. There was a significant area of produced water impact on the well pad prior to the release that was scheduled to be cleaned up due to the possible construction of a SWD facility on the well pad.

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>Mike Bratcher</u>	
Title: Waste Management and Remediation Specialist		Approval Date: <u>12/16/14</u>	Expiration Date: <u>N/A</u>
E-mail Address: <u>tasavoie@basspet.com</u>		Conditions of Approval: Remediation per O.C.D. Rules & Guidelines	
Date: <u>12/15/14</u>		Attached ☐	
Phone: <u>432-556-8730</u>		SUBMIT REMEDIATION PROPOSAL NO.	

LATER THAN: 11/10/15

* Attach Additional Sheets If Necessary

2RP-2463

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-2663
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID
Contact Name: Kyle Littrell	Contact Telephone: 432-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident # 2RP-2663
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.208897°

Longitude -103.914495°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: ND Federal SWD No. 001	Site Type: Exploration and Production
Date Release Discovered: 12/3/2014	API#: 30-015-39713

Unit Letter	Section	Township	Range	County
A	19	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): 226 bbls	Volume Recovered (bbls): 85 bbls
	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:

A flex gasket on the wellhead failed releasing produced water on the well pad. All of the free-standing fluid was recovered and the gasket was replaced.

Incident ID	2RP-2663
District RP	
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?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

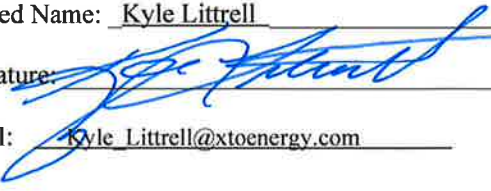
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

- ☒ 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 not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
 Signature:  Date: 10/22/2018
 email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

Incident ID	2RP-2663
District RP	
Facility ID	
Application ID	

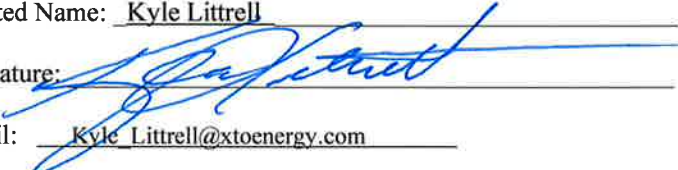
Closure

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 Coordinator
 Signature:  Date: 10/22/2018
 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: Bradford Billings Date: 11/18/2019
 Printed Name: Bradford Billings Title: E.Spec.A

NOTE: Soils reaming in wellhead vacinity must be evaluated at well/pad closure for full reclamation to have been deemed complete. Site RP is closed nonetheless.

Bradford Billings

Analytical Report 575575

for

LT Environmental, Inc.

Project Manager: Adrian Baker

ND 19 Federal SWD No. 001 RP-2663

14-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)



14-FEB-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **575575**

ND 19 Federal SWD No. 001 RP-2663

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) 575575. 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. 575575 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

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 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	02-05-18 16:04	Surface	575575-001
SS2	S	02-05-18 16:15	6"	575575-002
SS3	S	02-05-18 16:09	6"	575575-003
SS4	S	02-05-18 16:11	6"	575575-004
SS5	S	02-05-18 16:07	6"	575575-005



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ND 19 Federal SWD No. 001 RP-2663*

Project ID:
Work Order Number(s): 575575

Report Date: 14-FEB-18
Date Received: 02/07/2018

Sample receipt non conformance and comments:

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

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

Surrogate 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 575575-005.

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

Samples affected are: 575575-005, 575575-002.

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



Certificate of Analysis Summary 575575

LT Environmental, Inc., Arvada, CO

Project Name: ND 19 Federal SWD No. 001 RP-2663



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

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

Report Date: 14-FEB-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	575575-001	575575-002	575575-003	575575-004	575575-005	
	Field Id:	SS1	SS2	SS3	SS4	SS5	
	Depth:	Surface-	6"-	6"-	6"-	6"-	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Feb-05-18 16:04	Feb-05-18 16:15	Feb-05-18 16:09	Feb-05-18 16:11	Feb-05-18 16:07	
BTEX by EPA 8021B	Extracted:	Feb-08-18 08:45	Feb-08-18 08:45	Feb-07-18 14:10	Feb-07-18 14:10	Feb-08-18 08:45	
	Analyzed:	Feb-12-18 12:11	Feb-12-18 12:11	Feb-08-18 02:54	Feb-08-18 03:13	Feb-12-18 12:11	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00382 0.00382	<0.00351 0.00351	<0.00198 0.00198	<0.00199 0.00199	<0.00357 0.00357	
Toluene		<0.00382 0.00382	<0.00351 0.00351	<0.00198 0.00198	<0.00199 0.00199	<0.00357 0.00357	
Ethylbenzene		<0.00382 0.00382	<0.00351 0.00351	<0.00198 0.00198	<0.00199 0.00199	<0.00357 0.00357	
m,p-Xylenes		<0.00763 0.00763	<0.00702 0.00702	<0.00396 0.00396	<0.00398 0.00398	<0.00714 0.00714	
o-Xylene		<0.00382 0.00382	<0.00351 0.00351	<0.00198 0.00198	<0.00199 0.00199	<0.00357 0.00357	
Total Xylenes		<0.00382 0.00382	<0.00351 0.00351	<0.00198 0.00198	<0.00199 0.00199	<0.00357 0.00357	
Total BTEX		<0.00382 0.00382	<0.00351 0.00351	<0.00198 0.00198	<0.00199 0.00199	<0.00357 0.00357	
Inorganic Anions by EPA 300	Extracted:	Feb-13-18 14:10	Feb-13-18 14:10	Feb-13-18 14:10	Feb-13-18 14:10	Feb-13-18 14:10	
	Analyzed:	Feb-13-18 16:23	Feb-13-18 16:30	Feb-13-18 16:51	Feb-13-18 16:58	Feb-13-18 17:05	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		2360 24.7	9.76 4.98	137 4.94	10.9 4.97	147 4.95	
TPH by SW8015 Mod	Extracted:	Feb-10-18 11:00	Feb-10-18 11:00	Feb-10-18 11:00	Feb-10-18 11:00	Feb-10-18 11:00	
	Analyzed:	Feb-10-18 22:35	Feb-10-18 23:39	Feb-10-18 23:59	Feb-11-18 00:20	Feb-11-18 00:43	
	Units/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	
Diesel Range Organics (DRO)		103 15.0	<15.0 15.0	37.7 15.0	<15.0 15.0	<14.9 14.9	
Oil Range Hydrocarbons (ORO)		18.9 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	
Total TPH		122 15.0	<15.0 15.0	37.7 15.0	<15.0 15.0	<14.9 14.9	

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

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

Jessica Kramer

Jessica Kramer
Odessa Laboratory Director



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: SS1
Lab Sample Id: 575575-001

Matrix: Soil
Date Collected: 02.05.18 16.04

Date Received: 02.07.18 08.00
Sample Depth: Surface

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	2360	24.7	mg/kg	02.13.18 16.23		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040795

Date Prep: 02.10.18 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.18 22.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	103	15.0	mg/kg	02.10.18 22.35		1
Oil Range Hydrocarbons (ORO)	PHCG2835	18.9	15.0	mg/kg	02.10.18 22.35		1
Total TPH	PHC635	122	15.0	mg/kg	02.10.18 22.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.10.18 22.35	
o-Terphenyl	84-15-1	102	%	70-135	02.10.18 22.35	



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: SS1
Lab Sample Id: 575575-001

Matrix: Soil
Date Collected: 02.05.18 16.04

Date Received: 02.07.18 08.00
Sample Depth: Surface

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040738

Date Prep: 02.08.18 08.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00382	0.00382	mg/kg	02.12.18 12.11	U	1
Toluene	108-88-3	<0.00382	0.00382	mg/kg	02.12.18 12.11	U	1
Ethylbenzene	100-41-4	<0.00382	0.00382	mg/kg	02.12.18 12.11	U	1
m,p-Xylenes	179601-23-1	<0.00763	0.00763	mg/kg	02.12.18 12.11	U	1
o-Xylene	95-47-6	<0.00382	0.00382	mg/kg	02.12.18 12.11	U	1
Total Xylenes	1330-20-7	<0.00382	0.00382	mg/kg	02.12.18 12.11	U	1
Total BTEX		<0.00382	0.00382	mg/kg	02.12.18 12.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	80-120	02.12.18 12.11		
1,4-Difluorobenzene	540-36-3	86	%	80-120	02.12.18 12.11		



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: SS2 Matrix: Soil Date Received: 02.07.18 08.00
Lab Sample Id: 575575-002 Date Collected: 02.05.18 16.15 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	9.76	4.98	mg/kg	02.13.18 16.30		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 02.10.18 11.00 Basis: Wet Weight
Seq Number: 3040795

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.18 23.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.10.18 23.39	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.10.18 23.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.10.18 23.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	02.10.18 23.39	
o-Terphenyl	84-15-1	91	%	70-135	02.10.18 23.39	



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: SS2
Lab Sample Id: 575575-002

Matrix: Soil
Date Collected: 02.05.18 16.15

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040738

Date Prep: 02.08.18 08.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00351	0.00351	mg/kg	02.12.18 12.11	U	1
Toluene	108-88-3	<0.00351	0.00351	mg/kg	02.12.18 12.11	U	1
Ethylbenzene	100-41-4	<0.00351	0.00351	mg/kg	02.12.18 12.11	U	1
m,p-Xylenes	179601-23-1	<0.00702	0.00702	mg/kg	02.12.18 12.11	U	1
o-Xylene	95-47-6	<0.00351	0.00351	mg/kg	02.12.18 12.11	U	1
Total Xylenes	1330-20-7	<0.00351	0.00351	mg/kg	02.12.18 12.11	U	1
Total BTEX		<0.00351	0.00351	mg/kg	02.12.18 12.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	80-120	02.12.18 12.11		
4-Bromofluorobenzene	460-00-4	75	%	80-120	02.12.18 12.11	**	



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: SS3
Lab Sample Id: 575575-003

Matrix: Soil
Date Collected: 02.05.18 16.09

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	137	4.94	mg/kg	02.13.18 16.51		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3040795

Prep Method: TX1005P
% Moisture:
Date Prep: 02.10.18 11.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.18 23.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	37.7	15.0	mg/kg	02.10.18 23.59		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.10.18 23.59	U	1
Total TPH	PHC635	37.7	15.0	mg/kg	02.10.18 23.59		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	91	%	70-135	02.10.18 23.59		
o-Terphenyl	84-15-1	92	%	70-135	02.10.18 23.59		



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: SS3
Lab Sample Id: 575575-003

Matrix: Soil
Date Collected: 02.05.18 16.09

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	<0.00198	0.00198	mg/kg	02.08.18 02.54	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.08.18 02.54	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.08.18 02.54	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.08.18 02.54	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.08.18 02.54	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.08.18 02.54	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.08.18 02.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	80-120	02.08.18 02.54		
4-Bromofluorobenzene	460-00-4	93	%	80-120	02.08.18 02.54		



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: **SS4**
Lab Sample Id: 575575-004

Matrix: Soil
Date Collected: 02.05.18 16.11

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	10.9	4.97	mg/kg	02.13.18 16.58		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3040795

Date Prep: 02.10.18 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 00.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.11.18 00.20	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 00.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.11.18 00.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	101	%	70-135	02.11.18 00.20		
o-Terphenyl	84-15-1	99	%	70-135	02.11.18 00.20		



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: SS4
Lab Sample Id: 575575-004

Matrix: Soil
Date Collected: 02.05.18 16.11

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	<0.00199	0.00199	mg/kg	02.08.18 03.13	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.08.18 03.13	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.08.18 03.13	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.08.18 03.13	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.08.18 03.13	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.08.18 03.13	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.08.18 03.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	87	%	80-120	02.08.18 03.13		
4-Bromofluorobenzene	460-00-4	90	%	80-120	02.08.18 03.13		



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: SS5
Lab Sample Id: 575575-005

Matrix: Soil
Date Collected: 02.05.18 16.07

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	147	4.95	mg/kg	02.13.18 17.05		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3040795

Prep Method: TX1005P
% Moisture:
Date Prep: 02.10.18 11.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.11.18 00.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	02.11.18 00.43	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	02.11.18 00.43	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	02.11.18 00.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	86	%	70-135	02.11.18 00.43		
o-Terphenyl	84-15-1	88	%	70-135	02.11.18 00.43		



Certificate of Analytical Results 575575



LT Environmental, Inc., Arvada, CO

ND 19 Federal SWD No. 001 RP-2663

Sample Id: SS5
Lab Sample Id: 575575-005

Matrix: Soil
Date Collected: 02.05.18 16.07

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	<0.00357	0.00357	mg/kg	02.12.18 12.11	U	1
Toluene	108-88-3	<0.00357	0.00357	mg/kg	02.12.18 12.11	U	1
Ethylbenzene	100-41-4	<0.00357	0.00357	mg/kg	02.12.18 12.11	U	1
m,p-Xylenes	179601-23-1	<0.00714	0.00714	mg/kg	02.12.18 12.11	U	1
o-Xylene	95-47-6	<0.00357	0.00357	mg/kg	02.12.18 12.11	U	1
Total Xylenes	1330-20-7	<0.00357	0.00357	mg/kg	02.12.18 12.11	U	1
Total BTEX		<0.00357	0.00357	mg/kg	02.12.18 12.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	64	%	80-120	02.12.18 12.11	**	
1,4-Difluorobenzene	540-36-3	76	%	80-120	02.12.18 12.11	**	

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

PQL Practical Quantitation Limit **SQL** Sample 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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 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



QC Summary 575575

LT Environmental, Inc.
ND 19 Federal SWD No. 001 RP-2663

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: 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: 3040795

MB Sample Id: 7638962-1-BLK

Matrix: Solid

LCS Sample Id: 7638962-1-BKS

Prep Method: TX1005P

Date Prep: 02.10.18

LCSD Sample Id: 7638962-1-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	952	95	813	81	70-135	16	35	mg/kg	02.10.18 21:55	
Diesel Range Organics (DRO)	<15.0	1000	1090	109	929	93	70-135	16	35	mg/kg	02.10.18 21:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		107		94		70-135	%	02.10.18 21:55
o-Terphenyl	99		112		97		70-135	%	02.10.18 21:55

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



QC Summary 575575

LT Environmental, Inc.
ND 19 Federal SWD No. 001 RP-2663

Analytical Method: TPH by SW8015 Mod

Seq Number: 3040795

Parent Sample Id: 575575-001

Matrix: Soil

MS Sample Id: 575575-001 S

Prep Method: TX1005P

Date Prep: 02.10.18

MSD Sample Id: 575575-001 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	1000	978	98	990	99	70-135	1	35	mg/kg	02.10.18 22:55	
Diesel Range Organics (DRO)	103	1000	1090	99	1100	100	70-135	1	35	mg/kg	02.10.18 22:55	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		105		70-135	%	02.10.18 22:55
o-Terphenyl	111		107		70-135	%	02.10.18 22:55

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

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

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



QC Summary 575575

LT Environmental, Inc.
ND 19 Federal SWD No. 001 RP-2663

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

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

CHAIN OF CUSTODY

Page 1 of 1

Revision 2016.1

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Xenco Quote #

Xenco Job #

575575

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes				
Company Name / Branch:				Project Name/Number:												
Company Address:				Project Location:												
Email:				Invoice To:												
Phone No:																
Project Contact:				PO Number:												
Sample Name:																
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments	
1	SS1	Surface	2/5	4:04	S	1										
2	SS2	6"		4:15												
3	SS3	6"		4:09												
4	SS4	6"		4:11												
5	SS5	6"		4:07												
6																
7																
8																
9																
10																
Turnaround Time (Business days)		Data Deliverable Information														
☐ Same Day TAT		☐ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg /raw data)										
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV										
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG -411										
☐ 3 Day EMERGENCY		☐ STA Run		☐ Level II Report with TRRP checklist												
TAT Starts Day received by Lab, if received by 5:00 pm																
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
1. <i>Mark</i>		2/6/18 6:15		<i>Mark</i>		2/7/18 8:00		<i>Mark</i>		2/7/18 8:00		<i>Mark</i>		2/7/18 8:00		
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
3.				3.				4.				4.				
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
5.				5.				5.				5.				

Temp: 4

CF: (-0.6: -0.2°C)

(6-23: +0.2°C)

Corrected Temp: 3.8

IR ID: R-8

FED-EX Tracking #

On Ice ☒ Cooler Temp. Thermo. Corr. Factor

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

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

Work Order #: 575575

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
Connie Hernandez

Date: 02/07/2018

Checklist reviewed by: Jessica Kramer
Jessica Kramer

Date: 02/07/2018

Analytical Report 598445

for
LT Environmental, Inc.

Project Manager: Adrian Baker

ND 19 Federal

13-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



13-SEP-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **598445**

ND 19 Federal

Project Address: Cralsbad, 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) 598445. 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. 598445 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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



Sample Cross Reference 598445



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	09-05-18 10:40	2 ft	598445-001
FS01	S	09-05-18 11:20	4 ft	598445-002
SW02	S	09-05-18 13:10	2 ft	598445-003
SW03	S	09-05-18 14:40	2 ft	598445-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ND 19 Federal*

Project ID:
Work Order Number(s): 598445

Report Date: 13-SEP-18
Date Received: 09/08/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3062709 BTEX by EPA 8021B

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



Certificate of Analysis Summary 598445

LT Environmental, Inc., Arvada, CO

Project Name: ND 19 Federal



Project Id:

Contact: Adrian Baker

Project Location: Cralsbad, NM

Date Received in Lab: Sat Sep-08-18 08:00 am

Report Date: 13-SEP-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	598445-001	598445-002	598445-003	598445-004		
	Field Id:	SW01	FS01	SW02	SW03		
	Depth:	2- ft	4- ft	2- ft	2- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Sep-05-18 10:40	Sep-05-18 11:20	Sep-05-18 13:10	Sep-05-18 14:40		
BTEX by EPA 8021B	Extracted:	Sep-10-18 10:00	Sep-10-18 10:00	Sep-10-18 10:00	Sep-10-18 10:00		
	Analyzed:	Sep-10-18 18:20	Sep-10-18 18:41	Sep-10-18 19:02	Sep-10-18 19:23		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401	<0.00402 0.00402	<0.00398 0.00398		
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Inorganic Anions by EPA 300	Extracted:	Sep-11-18 14:00	Sep-11-18 14:00	Sep-11-18 14:00	Sep-11-18 14:00		
	Analyzed:	Sep-11-18 17:13	Sep-11-18 17:20	Sep-11-18 17:26	Sep-11-18 17:32		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		172 5.00	212 5.00	12.7 5.02	70.3 5.00		
TPH by SW8015 Mod	Extracted:	Sep-11-18 12:00	Sep-11-18 12:00	Sep-11-18 12:00	Sep-11-18 12:00		
	Analyzed:	Sep-11-18 14:57	Sep-11-18 15:16	Sep-11-18 15:35	Sep-11-18 15:53		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 598445



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW01**
Lab Sample Id: 598445-001

Matrix: Soil
Date Collected: 09.05.18 10.40

Date Received: 09.08.18 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3062839

Date Prep: 09.11.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	172	5.00	mg/kg	09.11.18 17.13		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3062894

Date Prep: 09.11.18 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 14.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 14.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 14.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 14.57	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	92	%	70-135	09.11.18 14.57	
84-15-1	94	%	70-135	09.11.18 14.57	



Certificate of Analytical Results 598445



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW01**
Lab Sample Id: 598445-001

Matrix: Soil
Date Collected: 09.05.18 10.40

Date Received: 09.08.18 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3062709

Date Prep: 09.10.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.10.18 18.20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.10.18 18.20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.10.18 18.20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.10.18 18.20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.10.18 18.20	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.10.18 18.20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.10.18 18.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.10.18 18.20		
1,4-Difluorobenzene	540-36-3	117	%	70-130	09.10.18 18.20		



Certificate of Analytical Results 598445



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS01**
Lab Sample Id: 598445-002

Matrix: Soil
Date Collected: 09.05.18 11.20

Date Received: 09.08.18 08.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3062839

Date Prep: 09.11.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	212	5.00	mg/kg	09.11.18 17.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3062894

Date Prep: 09.11.18 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 15.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 15.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 15.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 15.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	09.11.18 15.16	
o-Terphenyl	84-15-1	98	%	70-135	09.11.18 15.16	



Certificate of Analytical Results 598445



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS01**
Lab Sample Id: 598445-002

Matrix: Soil
Date Collected: 09.05.18 11.20

Date Received: 09.08.18 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3062709

Date Prep: 09.10.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.18 18.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.18 18.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.18 18.41	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.10.18 18.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.18 18.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.18 18.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.18 18.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	120	%	70-130	09.10.18 18.41		
4-Bromofluorobenzene	460-00-4	92	%	70-130	09.10.18 18.41		



Certificate of Analytical Results 598445



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW02**
Lab Sample Id: 598445-003

Matrix: Soil
Date Collected: 09.05.18 13.10

Date Received: 09.08.18 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3062839

Date Prep: 09.11.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.7	5.02	mg/kg	09.11.18 17.26		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3062894

Date Prep: 09.11.18 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 15.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 15.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 15.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 15.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.11.18 15.35	
o-Terphenyl	84-15-1	96	%	70-135	09.11.18 15.35	



Certificate of Analytical Results 598445



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW02**
Lab Sample Id: 598445-003

Matrix: Soil
Date Collected: 09.05.18 13.10

Date Received: 09.08.18 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.10.18 10.00

Basis: Wet Weight

Seq Number: 3062709

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.10.18 19.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.10.18 19.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.10.18 19.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.10.18 19.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.10.18 19.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.10.18 19.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.10.18 19.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	126	%	70-130	09.10.18 19.02		
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.10.18 19.02		



Certificate of Analytical Results 598445



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW03**
Lab Sample Id: 598445-004

Matrix: Soil
Date Collected: 09.05.18 14.40

Date Received: 09.08.18 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3062839

Date Prep: 09.11.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	70.3	5.00	mg/kg	09.11.18 17.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3062894

Date Prep: 09.11.18 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.11.18 15.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.11.18 15.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.11.18 15.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.11.18 15.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	09.11.18 15.53	
o-Terphenyl	84-15-1	99	%	70-135	09.11.18 15.53	



Certificate of Analytical Results 598445



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW03**
Lab Sample Id: 598445-004

Matrix: Soil
Date Collected: 09.05.18 14.40

Date Received: 09.08.18 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3062709

Date Prep: 09.10.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.10.18 19.23	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.10.18 19.23	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.10.18 19.23	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.10.18 19.23	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.10.18 19.23	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.10.18 19.23	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.10.18 19.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.10.18 19.23		
1,4-Difluorobenzene	540-36-3	119	%	70-130	09.10.18 19.23		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 598445

LT Environmental, Inc.

ND 19 Federal

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3062839

MB Sample Id: 7662040-1-BLK

Matrix: Solid

LCS Sample Id: 7662040-1-BKS

Prep Method: E300P

Date Prep: 09.11.18

LCSD Sample Id: 7662040-1-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	260	104	258	103	90-110	1	20	mg/kg	09.11.18 16:43	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3062839

Parent Sample Id: 598439-006

Matrix: Soil

MS Sample Id: 598439-006 S

Prep Method: E300P

Date Prep: 09.11.18

MSD Sample Id: 598439-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.28	294	303	102	302	101	90-110	0	20	mg/kg	09.11.18 18:28	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3062839

Parent Sample Id: 598441-010

Matrix: Soil

MS Sample Id: 598441-010 S

Prep Method: E300P

Date Prep: 09.11.18

MSD Sample Id: 598441-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.912	266	262	98	262	98	90-110	0	20	mg/kg	09.11.18 17:01	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3062894

MB Sample Id: 7662103-1-BLK

Matrix: Solid

LCS Sample Id: 7662103-1-BKS

Prep Method: TX1005P

Date Prep: 09.11.18

LCSD Sample Id: 7662103-1-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	1050	105	70-135	1	20	mg/kg	09.11.18 13:05	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	1140	114	70-135	6	20	mg/kg	09.11.18 13:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		123		126		70-135	%	09.11.18 13:05
o-Terphenyl	97		114		114		70-135	%	09.11.18 13:05

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

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

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

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



QC Summary 598445

LT Environmental, Inc.

ND 19 Federal

Analytical Method: TPH by SW8015 Mod

Seq Number: 3062894

Parent Sample Id: 598400-001

Matrix: Soil

MS Sample Id: 598400-001 S

Prep Method: TX1005P

Date Prep: 09.11.18

MSD Sample Id: 598400-001 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)	9.10	1040	993	95	1010	96	70-135	2	20	mg/kg	09.11.18 14:01	
Diesel Range Organics (DRO)	8.72	1040	1060	101	1080	103	70-135	2	20	mg/kg	09.11.18 14:01	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		113		70-135	%	09.11.18 14:01
o-Terphenyl	96		96		70-135	%	09.11.18 14:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3062709

MB Sample Id: 7662011-1-BLK

Matrix: Solid

LCS Sample Id: 7662011-1-BKS

Prep Method: SW5030B

Date Prep: 09.10.18

LCSD Sample Id: 7662011-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.123	123	0.105	105	70-130	16	35	mg/kg	09.10.18 10:35	
Toluene	<0.00200	0.0998	0.0859	86	0.0722	72	70-130	17	35	mg/kg	09.10.18 10:35	
Ethylbenzene	<0.00200	0.0998	0.0990	99	0.0818	82	70-130	19	35	mg/kg	09.10.18 10:35	
m,p-Xylenes	<0.00101	0.200	0.197	99	0.163	81	70-130	19	35	mg/kg	09.10.18 10:35	
o-Xylene	<0.00200	0.0998	0.0947	95	0.0782	78	70-130	19	35	mg/kg	09.10.18 10:35	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	117		88		89		70-130	%	09.10.18 10:35
4-Bromofluorobenzene	82		92		78		70-130	%	09.10.18 10:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3062709

Parent Sample Id: 598443-001

Matrix: Soil

MS Sample Id: 598443-001 S

Prep Method: SW5030B

Date Prep: 09.10.18

MSD Sample Id: 598443-001 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	0.101	101	0.103	103	70-130	2	35	mg/kg	09.10.18 11:17	
Toluene	<0.00199	0.0996	0.0712	71	0.0702	70	70-130	1	35	mg/kg	09.10.18 11:17	
Ethylbenzene	<0.00199	0.0996	0.0801	80	0.0803	80	70-130	0	35	mg/kg	09.10.18 11:17	
m,p-Xylenes	<0.00101	0.199	0.159	80	0.158	79	70-130	1	35	mg/kg	09.10.18 11:17	
o-Xylene	<0.00199	0.0996	0.0777	78	0.0764	76	70-130	2	35	mg/kg	09.10.18 11:17	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		103		70-130	%	09.10.18 11:17
4-Bromofluorobenzene	87		95		70-130	%	09.10.18 11:17

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

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

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

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

Setting the Standard since 1890
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

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

Phoenix, Arizona (480-355-0900)

www.xenoco.com

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes																																																																																																																																																																				
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: ND 14 Federal				W = Water S = Soil/Sed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water A = Air Xenco Quote # Xenco Job #				Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705 Email: Phone No: (432) 704-5178 Project Location: Curtis, NM Invoice To: KTO Energy - Kyle Littlell																																																																																																																																																																				
Project Contact: Adrian Baker Sampler's Name: Ben Betton				PO Number: ZRP-2663																																																																																																																																																																												
Field ID / Point of Collection No. _____				Collection Sample Depth Date Time Matrix # of bottles HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE				Number of preserved bottles DTEX EPA 8020 TPH EPA 8015 Chloride 300.1																																																																																																																																																																								
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losses or expenses incurred by the Client if such losses due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be assessed for each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:MAFA (806) 794-1296
XENCO
XENCO
1211 W. FLORIDA AVE
MIDLAND, TX 79701
UNITED STATES US

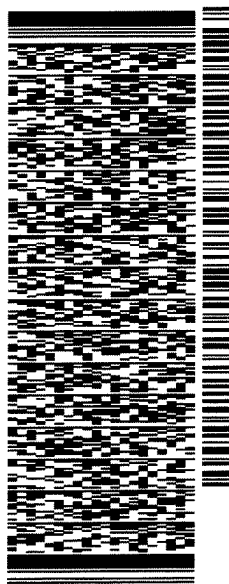
SHIP DATE: 07SEP18
ACTWGT: 32.00 LB
CAD: 101813/06/INET4040
DIMS: 19x13x16 IN
BILL RECIPIENT

TO XENCO

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200 W INTERSTATE 20

MIDLAND TX 79701

(806) 794-1296 REF
INV/ DEPT:
PO

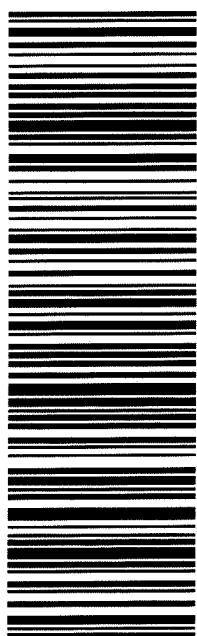


TRK# 7731 6654 8890
0201

SATURDAY HOLD
PRIORITY OVERNIGHT

41 MAFA

HLD
MAFKI
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After printing this label:

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

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



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/08/2018 08:00:00 AM

Work Order #: 598445

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 09/10/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 09/10/2018

Analytical Report 598787

for
LT Environmental, Inc.

Project Manager: Adrian Baker

ND 19 Federal

012918040

13-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



13-SEP-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **598787**

ND 19 Federal

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) 598787. 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. 598787 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 598787



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW04	S	09-10-18 14:25	2 ft	598787-001
FS02	S	09-10-18 14:30	4 ft	598787-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ND 19 Federal*

Project ID: 012918040
Work Order Number(s): 598787

Report Date: 13-SEP-18
Date Received: 09/12/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3063031 BTEX by EPA 8021B

Lab Sample ID 598787-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 598787-001, -002.

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

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



Certificate of Analysis Summary 598787

LT Environmental, Inc., Arvada, CO

Project Name: ND 19 Federal



Project Id: 012918040
Contact: Adrian Baker
Project Location: Carlsbad NM

Date Received in Lab: Wed Sep-12-18 12:00 pm
Report Date: 13-SEP-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	598787-001	598787-002				
	Field Id:	SW04	FS02				
	Depth:	2- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Sep-10-18 14:25	Sep-10-18 14:30				
BTEX by EPA 8021B	Extracted:	Sep-12-18 15:00	Sep-12-18 15:00				
	Analyzed:	Sep-12-18 22:16	Sep-12-18 22:36				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00199 0.00199	<0.00199 0.00199				
Toluene		<0.00199 0.00199	<0.00199 0.00199				
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199				
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398				
o-Xylene		<0.00199 0.00199	<0.00199 0.00199				
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199				
Total BTEX		<0.00199 0.00199	<0.00199 0.00199				
Inorganic Anions by EPA 300	Extracted:	Sep-13-18 10:00	Sep-13-18 10:00				
	Analyzed:	Sep-13-18 17:52	Sep-13-18 17:59				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		416 4.95	149 5.00				
TPH by SW8015 Mod	Extracted:	Sep-13-18 10:33	Sep-13-18 10:33				
	Analyzed:	*** ** *	*** ** *				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9				
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9				
Total TPH		<15.0 15.0	<14.9 14.9				

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

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

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 598787



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW04**
Lab Sample Id: 598787-001

Matrix: Soil
Date Collected: 09.10.18 14.25

Date Received: 09.12.18 12.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3063122

Date Prep: 09.13.18 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	416	4.95	mg/kg	09.13.18 17.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3063073

Date Prep: 09.13.18 10.33

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.18 22.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.18 22.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.12.18 22.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.18 22.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	09.12.18 22.25	
o-Terphenyl	84-15-1	100	%	70-135	09.12.18 22.25	



Certificate of Analytical Results 598787



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW04**
Lab Sample Id: 598787-001

Matrix: Soil
Date Collected: 09.10.18 14.25

Date Received: 09.12.18 12.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063031

Date Prep: 09.12.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.18 22.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.18 22.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.18 22.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.18 22.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.18 22.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.18 22.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.18 22.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	70-130	09.12.18 22.16		
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.12.18 22.16		



Certificate of Analytical Results 598787



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS02**
Lab Sample Id: 598787-002

Matrix: Soil
Date Collected: 09.10.18 14.30

Date Received: 09.12.18 12.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3063122

Date Prep: 09.13.18 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	149	5.00	mg/kg	09.13.18 17.59		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3063073

Date Prep: 09.13.18 10.33

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	09.12.18 22.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.12.18 22.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.12.18 22.44	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.12.18 22.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	09.12.18 22.44	
o-Terphenyl	84-15-1	99	%	70-135	09.12.18 22.44	



Certificate of Analytical Results 598787



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS02**
Lab Sample Id: 598787-002

Matrix: Soil
Date Collected: 09.10.18 14.30

Date Received: 09.12.18 12.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063031

Date Prep: 09.12.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.18 22.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.18 22.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.18 22.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.18 22.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.18 22.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.18 22.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.18 22.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.12.18 22.36		
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.12.18 22.36		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 598787

LT Environmental, Inc. ND 19 Federal

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063122

MB Sample Id: 7662237-1-BLK

Matrix: Solid

LCS Sample Id: 7662237-1-BKS

Prep Method: E300P

Date Prep: 09.13.18

LCSD Sample Id: 7662237-1-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	269	108	267	107	90-110	1	20	mg/kg	09.13.18 16:49	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063122

Parent Sample Id: 598786-003

Matrix: Soil

MS Sample Id: 598786-003 S

Prep Method: E300P

Date Prep: 09.13.18

MSD Sample Id: 598786-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.2	249	266	96	266	96	90-110	0	20	mg/kg	09.13.18 17:22	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3063073

MB Sample Id: 7662165-1-BLK

Matrix: Solid

LCS Sample Id: 7662165-1-BKS

Prep Method: TX1005P

Date Prep: 09.13.18

LCSD Sample Id: 7662165-1-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	893	89	893	89	70-135	0	20	mg/kg	09.12.18 19:04	
Diesel Range Organics (DRO)	<8.13	1000	990	99	1000	100	70-135	1	20	mg/kg	09.12.18 19:04	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	96		128		122		70-135	%	09.12.18 19:04			
o-Terphenyl	101		127		118		70-135	%	09.12.18 19:04			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3063073

Parent Sample Id: 598783-001

Matrix: Soil

MS Sample Id: 598783-001 S

Prep Method: TX1005P

Date Prep: 09.13.18

MSD Sample Id: 598783-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	973	97	999	100	70-135	3	20	mg/kg	09.12.18 19:59	
Diesel Range Organics (DRO)	<8.12	999	1050	105	1070	107	70-135	2	20	mg/kg	09.12.18 19:59	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			125		124		70-135	%	09.12.18 19:59			
o-Terphenyl			123		123		70-135	%	09.12.18 19:59			

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

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

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

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



QC Summary 598787

LT Environmental, Inc. ND 19 Federal

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063031

MB Sample Id: 7662193-1-BLK

Matrix: Solid

LCS Sample Id: 7662193-1-BKS

Prep Method: SW5030B

Date Prep: 09.12.18

LCSD Sample Id: 7662193-1-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	0.0963	96	0.0952	95	70-130	1	35	mg/kg	09.12.18 20:08	
Toluene	<0.00200	0.100	0.0886	89	0.0873	87	70-130	1	35	mg/kg	09.12.18 20:08	
Ethylbenzene	<0.00200	0.100	0.0941	94	0.0947	95	70-130	1	35	mg/kg	09.12.18 20:08	
m,p-Xylenes	<0.00400	0.200	0.191	96	0.189	94	70-130	1	35	mg/kg	09.12.18 20:08	
o-Xylene	<0.00200	0.100	0.0934	93	0.0940	94	70-130	1	35	mg/kg	09.12.18 20:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		106		102		70-130	%	09.12.18 20:08
4-Bromofluorobenzene	80		99		101		70-130	%	09.12.18 20:08

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063031

Parent Sample Id: 598787-001

Matrix: Soil

MS Sample Id: 598787-001 S

Prep Method: SW5030B

Date Prep: 09.12.18

MSD Sample Id: 598787-001 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	0.0892	90	0.0815	82	70-130	9	35	mg/kg	09.12.18 20:51	
Toluene	<0.00199	0.0996	0.0769	77	0.0703	70	70-130	9	35	mg/kg	09.12.18 20:51	
Ethylbenzene	<0.00199	0.0996	0.0735	74	0.0699	70	70-130	5	35	mg/kg	09.12.18 20:51	
m,p-Xylenes	<0.00398	0.199	0.141	71	0.133	67	70-130	6	35	mg/kg	09.12.18 20:51	X
o-Xylene	<0.00199	0.0996	0.0726	73	0.0700	70	70-130	4	35	mg/kg	09.12.18 20:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		100		70-130	%	09.12.18 20:51
4-Bromofluorobenzene	106		86		70-130	%	09.12.18 20:51

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

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

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

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

Client / Reporting Information Company Name / Branch: LT Environmental, Inc. - Permian Office Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705 Email: Abaker@lienr.com Phone No: (432) 704-5178 Project Contact: Adrian Baker Project Name/Number: 0129180419/ND 19 Federal Project Location: Carlsbad, NM Invoice To: XTO Energy - Kyle Litrell PO Number: 2RRP-2663		Project Information Project Name/Number: 0129180419/ND 19 Federal Project Location: Carlsbad, NM Invoice To: XTO Energy - Kyle Litrell PO Number: 2RRP-2663	
Field ID / Point of Collection No. 1 Sample Depth 2' Date 9/9/18 Time 1425 Matrix S # of bottles 1 HCl 1 NaOH/Zn Acetate 1 HNO3 1 H2SO4 1 NaOH 1 NaHSO4 1 MEQH 1 NONE 1 FS02 4' 1430 S 1		Analytical Information BTEX EPA 8020 TPH EPA 8015 Chlorides 300.1	
Turnaround Time (Business days) ☐ Same Day TAT ☒ 5 Day TAT ☐ Next Day EMERGENCY ☐ 7 Day TAT ☐ 2 Day EMERGENCY ☐ Contract TAT ☐ 3 Day EMERGENCY		Data Deliverable Information ☐ Level II Std QC ☐ Level IV (Full Data Pkg raw data) ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐ Level 3 (CLP Forms) ☐ UST / RG 411 ☐ TRRP Checklist	
TAT Starts Day received by Lab, if received by 5:00 pm Relinquished by Sampler: ASR Date Time: 9/11/2018 14:02 Received By: Adrian Baker Date Time: 9/11/2018 15:30 Relinquished by: ASR Date Time: 9/11/2018 14:02 Received By: Adrian Baker Date Time: 9/11/2018 15:30 Relinquished by: ASR Date Time: 9/11/2018 14:02 Received By: Adrian Baker Date Time: 9/11/2018 15:30		Notes: 1. FS02 2. 4' 3. 1430 4. S 5. 1	
Field Comments 1. FS02 2. 4' 3. 1430 4. S 5. 1		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 WI = Wipe O = Oil WW = Waste Water A = Air	

ORIGIN ID:MAFA (806) 794-1296
XENCO
XENCO
1211 W. FLORIDA AVE
MIDLAND, TX 79701
UNITED STATES US

SHIP DATE: 11SEP18
ACTWGT: 40.00 LB
CAD: 101813706NET4040
DIMS: 11x13x15 IN
BILL RECIPIENT

TO XENCO

XENCO
1211 W. FLORIDA AVE

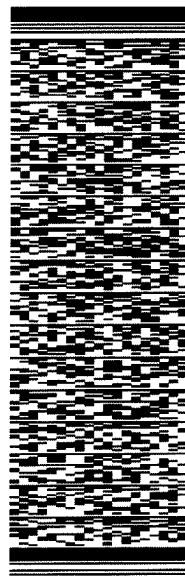
MIDLAND TX 79701

(806) 794-1296

REF:

PO:

DEPT:



J182118081501ur

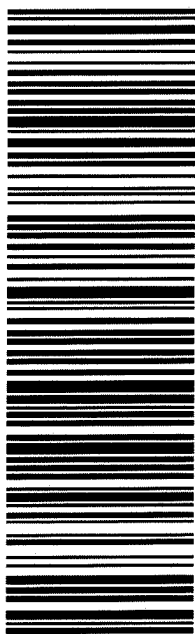
552J11F78C/DCA5

TRK# 7731 9150 7170
0201

WED - 12 SEP 10:30A
PRIORITY OVERNIGHT

41 MAFA

79701
TX-US LBB



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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/12/2018 12:00:00 PM

Work Order #: 598787

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6*Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Shawnee Gomez

Date: 09/12/2018

Checklist reviewed by:

Jessica Kramer

Date: 09/12/2018

Analytical Report 599236

for
LT Environmental, Inc.

Project Manager: Adrian Baker

ND 19 Federal

21-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



21-SEP-18

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

Reference: XENCO Report No(s): **599236**
ND 19 Federal
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) 599236. 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. 599236 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer
Project Assistant

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Sample Cross Reference 599236



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW05	S	09-11-18 09:25	2 ft	599236-001
SW06	S	09-11-18 12:30	2 ft	599236-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ND 19 Federal*

Project ID:
Work Order Number(s): 599236

Report Date: 21-SEP-18
Date Received: 09/15/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3063623 BTEX by EPA 8021B

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



Certificate of Analysis Summary 599236

LT Environmental, Inc., Arvada, CO

Project Name: ND 19 Federal



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Sat Sep-15-18 09:00 am

Report Date: 21-SEP-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	599236-001	599236-002				
	Field Id:	SW05	SW06				
	Depth:	2- ft	2- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Sep-11-18 09:25	Sep-11-18 12:30				
BTEX by EPA 8021B	Extracted:	Sep-18-18 08:00	Sep-18-18 08:00				
	Analyzed:	Sep-18-18 12:09	Sep-18-18 12:30				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00200 0.00200	<0.00201 0.00201				
	Toluene	<0.00200 0.00200	<0.00201 0.00201				
	Ethylbenzene	<0.00200 0.00200	<0.00201 0.00201				
	m,p-Xylenes	<0.00401 0.00401	<0.00402 0.00402				
	o-Xylene	<0.00200 0.00200	<0.00201 0.00201				
	Total Xylenes	<0.00200 0.00200	<0.00201 0.00201				
	Total BTEX	<0.00200 0.00200	<0.00201 0.00201				
Inorganic Anions by EPA 300	Extracted:	Sep-20-18 09:00	Sep-20-18 09:00				
	Analyzed:	Sep-20-18 11:54	Sep-20-18 11:20				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	16.0 4.99	132 4.98				
TPH by SW8015 Mod	Extracted:	Sep-17-18 13:00	Sep-17-18 13:00				
	Analyzed:	Sep-17-18 22:22	Sep-17-18 22:41				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	17.1 15.0	17.8 15.0				
	Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0	<15.0 15.0				
	Total TPH	17.1 15.0	17.8 15.0				

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

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

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 599236



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW05**
Lab Sample Id: 599236-001

Matrix: Soil
Date Collected: 09.11.18 09.25

Date Received: 09.15.18 09.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063936

Date Prep: 09.20.18 09.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.0	4.99	mg/kg	09.20.18 11.54		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063513

Date Prep: 09.17.18 13.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 22.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	17.1	15.0	mg/kg	09.17.18 22.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.17.18 22.22	U	1
Total TPH	PHC635	17.1	15.0	mg/kg	09.17.18 22.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.17.18 22.22	
o-Terphenyl	84-15-1	99	%	70-135	09.17.18 22.22	



Certificate of Analytical Results 599236



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW05**
Lab Sample Id: 599236-001

Matrix: Soil
Date Collected: 09.11.18 09.25

Date Received: 09.15.18 09.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063623

Date Prep: 09.18.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.18.18 12.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.18 12.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.18 12.09	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.18.18 12.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.18 12.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.18 12.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.18 12.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	81	%	70-130	09.18.18 12.09		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.18.18 12.09		



Certificate of Analytical Results 599236



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW06**
Lab Sample Id: 599236-002

Matrix: Soil
Date Collected: 09.11.18 12.30

Date Received: 09.15.18 09.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3063936

Date Prep: 09.20.18 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	132	4.98	mg/kg	09.20.18 11.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3063513

Date Prep: 09.17.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 22.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	17.8	15.0	mg/kg	09.17.18 22.41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.17.18 22.41	U	1
Total TPH	PHC635	17.8	15.0	mg/kg	09.17.18 22.41		1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	97	%	70-135	09.17.18 22.41	
84-15-1	99	%	70-135	09.17.18 22.41	



Certificate of Analytical Results 599236



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW06**
Lab Sample Id: 599236-002

Matrix: Soil
Date Collected: 09.11.18 12.30

Date Received: 09.15.18 09.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063623

Date Prep: 09.18.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.18.18 12.30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.18.18 12.30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.18.18 12.30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.18.18 12.30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.18.18 12.30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.18.18 12.30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.18.18 12.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.18.18 12.30		
4-Bromofluorobenzene	460-00-4	92	%	70-130	09.18.18 12.30		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 599236

LT Environmental, Inc.

ND 19 Federal

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063936

MB Sample Id: 7662680-1-BLK

Matrix: Solid

LCS Sample Id: 7662680-1-BKS

Prep Method: E300P

Date Prep: 09.20.18

LCSD Sample Id: 7662680-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	252	101	251	100	90-110	0	20	mg/kg	09.20.18 11:09	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063936

Parent Sample Id: 599233-003

Matrix: Soil

MS Sample Id: 599233-003 S

Prep Method: E300P

Date Prep: 09.20.18

MSD Sample Id: 599233-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.7	248	283	103	283	103	90-110	0	20	mg/kg	09.20.18 12:45	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063936

Parent Sample Id: 599236-002

Matrix: Soil

MS Sample Id: 599236-002 S

Prep Method: E300P

Date Prep: 09.20.18

MSD Sample Id: 599236-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	132	249	382	100	383	101	90-110	0	20	mg/kg	09.20.18 11:26	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3063513

MB Sample Id: 7662480-1-BLK

Matrix: Solid

LCS Sample Id: 7662480-1-BKS

Prep Method: TX1005P

Date Prep: 09.17.18

LCSD Sample Id: 7662480-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1010	101	1020	102	70-135	1	20	mg/kg	09.17.18 14:33	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	1050	105	70-135	3	20	mg/kg	09.17.18 14:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		125		124		70-135	%	09.17.18 14:33
o-Terphenyl	114		123		112		70-135	%	09.17.18 14:33

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

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

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

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



QC Summary 599236

LT Environmental, Inc.

ND 19 Federal

Analytical Method: TPH by SW8015 Mod

Seq Number: 3063513

Parent Sample Id: 599230-001

Matrix: Soil

MS Sample Id: 599230-001 S

Prep Method: TX1005P

Date Prep: 09.17.18

MSD Sample Id: 599230-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	962	96	966	97	70-135	0	20	mg/kg	09.17.18 16:47	
Diesel Range Organics (DRO)	13.4	999	1040	103	1050	104	70-135	1	20	mg/kg	09.17.18 16:47	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		129		70-135	%	09.17.18 16:47
o-Terphenyl	120		120		70-135	%	09.17.18 16:47

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063623

MB Sample Id: 7662561-1-BLK

Matrix: Solid

LCS Sample Id: 7662561-1-BKS

Prep Method: SW5030B

Date Prep: 09.18.18

LCSD Sample Id: 7662561-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0931	93	0.0896	90	70-130	4	35	mg/kg	09.18.18 08:38	
Toluene	<0.00200	0.0998	0.0939	94	0.0882	88	70-130	6	35	mg/kg	09.18.18 08:38	
Ethylbenzene	<0.00200	0.0998	0.101	101	0.0948	95	70-130	6	35	mg/kg	09.18.18 08:38	
m,p-Xylenes	<0.00399	0.200	0.192	96	0.180	90	70-130	6	35	mg/kg	09.18.18 08:38	
o-Xylene	<0.00200	0.0998	0.0994	100	0.0942	94	70-130	5	35	mg/kg	09.18.18 08:38	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		100		100		70-130	%	09.18.18 08:38
4-Bromofluorobenzene	99		94		93		70-130	%	09.18.18 08:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063623

Parent Sample Id: 598983-013

Matrix: Soil

MS Sample Id: 598983-013 S

Prep Method: SW5030B

Date Prep: 09.18.18

MSD Sample Id: 598983-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0740	73	0.0850	85	70-130	14	35	mg/kg	09.18.18 09:20	
Toluene	<0.00201	0.101	0.0747	74	0.0841	84	70-130	12	35	mg/kg	09.18.18 09:20	
Ethylbenzene	<0.00201	0.101	0.0802	79	0.0893	89	70-130	11	35	mg/kg	09.18.18 09:20	
m,p-Xylenes	<0.00402	0.201	0.152	76	0.170	85	70-130	11	35	mg/kg	09.18.18 09:20	
o-Xylene	<0.00201	0.101	0.0798	79	0.0874	87	70-130	9	35	mg/kg	09.18.18 09:20	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		98		70-130	%	09.18.18 09:20
4-Bromofluorobenzene	94		99		70-130	%	09.18.18 09:20

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

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

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



Phoenix, Arizona (480-355-0900)

109234

losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/15/2018 09:00:00 AM

Work Order #: 599236

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 09/17/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 09/17/2018

Analytical Report 599237

for
LT Environmental, Inc.

Project Manager: Adrian Baker

ND-19 Federal

21-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

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

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)

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

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



21-SEP-18

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

Reference: XENCO Report No(s): **599237**
ND-19 Federal
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) 599237. 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. 599237 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 599237



LT Environmental, Inc., Arvada, CO

ND-19 Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW07	S	09-12-18 11:50	2 ft	599237-001
FS03	S	09-12-18 11:10	4 ft	599237-002
SW08	S	09-12-18 15:30	2 ft	599237-003



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ND-19 Federal*

Project ID:
Work Order Number(s): 599237

Report Date: 21-SEP-18
Date Received: 09/15/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3063623 BTEX by EPA 8021B

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



Certificate of Analysis Summary 599237

LT Environmental, Inc., Arvada, CO

Project Name: ND-19 Federal



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Sat Sep-15-18 09:00 am

Report Date: 21-SEP-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	599237-001	599237-002	599237-003			
	Field Id:	SW07	FS03	SW08			
	Depth:	2- ft	4- ft	2- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Sep-12-18 11:50	Sep-12-18 11:10	Sep-12-18 15:30			
BTEX by EPA 8021B	Extracted:	Sep-18-18 08:00	Sep-18-18 08:00	Sep-18-18 08:00			
	Analyzed:	Sep-18-18 12:51	Sep-18-18 13:12	Sep-18-18 13:33			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199			
Toluene		<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199			
Ethylbenzene		<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199			
m,p-Xylenes		<0.00402 0.00402	<0.00397 0.00397	<0.00398 0.00398			
o-Xylene		<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199			
Total Xylenes		<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199			
Total BTEX		<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199			
Inorganic Anions by EPA 300	Extracted:	Sep-20-18 09:00	Sep-20-18 09:00	Sep-20-18 09:00			
	Analyzed:	Sep-20-18 11:37	Sep-20-18 11:43	Sep-20-18 11:48			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		308 25.3	572 4.97	<4.96 4.96			
TPH by SW8015 Mod	Extracted:	Sep-17-18 13:00	Sep-17-18 13:00	Sep-17-18 13:00			
	Analyzed:	Sep-17-18 22:59	Sep-17-18 23:18	Sep-17-18 23:37			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0			
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0			
Total TPH		<15.0 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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 599237



LT Environmental, Inc., Arvada, CO

ND-19 Federal

Sample Id: **SW07**
Lab Sample Id: 599237-001

Matrix: Soil
Date Collected: 09.12.18 11.50

Date Received: 09.15.18 09.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3063936

Date Prep: 09.20.18 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	308	25.3	mg/kg	09.20.18 11.37		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3063513

Date Prep: 09.17.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 22.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.17.18 22.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.17.18 22.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.17.18 22.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.17.18 22.59	
o-Terphenyl	84-15-1	98	%	70-135	09.17.18 22.59	



Certificate of Analytical Results 599237



LT Environmental, Inc., Arvada, CO

ND-19 Federal

Sample Id: **SW07**
Lab Sample Id: 599237-001

Matrix: Soil
Date Collected: 09.12.18 11.50

Date Received: 09.15.18 09.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063623

Date Prep: 09.18.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.18.18 12.51	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.18.18 12.51	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.18.18 12.51	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.18.18 12.51	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.18.18 12.51	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.18.18 12.51	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.18.18 12.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.18.18 12.51		
1,4-Difluorobenzene	540-36-3	115	%	70-130	09.18.18 12.51		



Certificate of Analytical Results 599237



LT Environmental, Inc., Arvada, CO

ND-19 Federal

Sample Id: **FS03**
Lab Sample Id: 599237-002

Matrix: Soil
Date Collected: 09.12.18 11.10

Date Received: 09.15.18 09.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3063936

Date Prep: 09.20.18 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	572	4.97	mg/kg	09.20.18 11.43		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3063513

Date Prep: 09.17.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.17.18 23.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.17.18 23.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.17.18 23.18	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.17.18 23.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	09.17.18 23.18	
o-Terphenyl	84-15-1	96	%	70-135	09.17.18 23.18	



Certificate of Analytical Results 599237



LT Environmental, Inc., Arvada, CO

ND-19 Federal

Sample Id: **FS03**
Lab Sample Id: 599237-002

Matrix: Soil
Date Collected: 09.12.18 11.10

Date Received: 09.15.18 09.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063623

Date Prep: 09.18.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.18.18 13.12	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.18.18 13.12	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.18.18 13.12	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.18.18 13.12	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.18.18 13.12	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.18.18 13.12	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.18.18 13.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	09.18.18 13.12		
4-Bromofluorobenzene	460-00-4	93	%	70-130	09.18.18 13.12		



Certificate of Analytical Results 599237



LT Environmental, Inc., Arvada, CO

ND-19 Federal

Sample Id: **SW08**
Lab Sample Id: 599237-003

Matrix: Soil
Date Collected: 09.12.18 15.30

Date Received: 09.15.18 09.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063936

Date Prep: 09.20.18 09.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	09.20.18 11.48	U	1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063513

Date Prep: 09.17.18 13.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 23.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.17.18 23.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.17.18 23.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.17.18 23.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.17.18 23.37	
o-Terphenyl	84-15-1	99	%	70-135	09.17.18 23.37	



Certificate of Analytical Results 599237



LT Environmental, Inc., Arvada, CO

ND-19 Federal

Sample Id: **SW08**
Lab Sample Id: 599237-003

Matrix: Soil
Date Collected: 09.12.18 15.30

Date Received: 09.15.18 09.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063623

Date Prep: 09.18.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.18.18 13.33	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.18.18 13.33	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.18.18 13.33	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.18.18 13.33	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.18.18 13.33	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.18.18 13.33	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.18.18 13.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.18.18 13.33		
4-Bromofluorobenzene	460-00-4	92	%	70-130	09.18.18 13.33		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 599237

LT Environmental, Inc. ND-19 Federal

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063936

MB Sample Id: 7662680-1-BLK

Matrix: Solid

LCS Sample Id: 7662680-1-BKS

Prep Method: E300P

Date Prep: 09.20.18

LCSD Sample Id: 7662680-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	252	101	251	100	90-110	0	20	mg/kg	09.20.18 11:09	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063936

Parent Sample Id: 599233-003

Matrix: Soil

MS Sample Id: 599233-003 S

Prep Method: E300P

Date Prep: 09.20.18

MSD Sample Id: 599233-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.7	248	283	103	283	103	90-110	0	20	mg/kg	09.20.18 12:45	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063936

Parent Sample Id: 599236-002

Matrix: Soil

MS Sample Id: 599236-002 S

Prep Method: E300P

Date Prep: 09.20.18

MSD Sample Id: 599236-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	132	249	382	100	383	101	90-110	0	20	mg/kg	09.20.18 11:26	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3063513

MB Sample Id: 7662480-1-BLK

Matrix: Solid

LCS Sample Id: 7662480-1-BKS

Prep Method: TX1005P

Date Prep: 09.17.18

LCSD Sample Id: 7662480-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1010	101	1020	102	70-135	1	20	mg/kg	09.17.18 14:33	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	1050	105	70-135	3	20	mg/kg	09.17.18 14:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		125		124		70-135	%	09.17.18 14:33
o-Terphenyl	114		123		112		70-135	%	09.17.18 14:33

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

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

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

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



QC Summary 599237

LT Environmental, Inc. ND-19 Federal

Analytical Method: TPH by SW8015 Mod

Seq Number: 3063513

Parent Sample Id: 599230-001

Matrix: Soil

MS Sample Id: 599230-001 S

Prep Method: TX1005P

Date Prep: 09.17.18

MSD Sample Id: 599230-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	962	96	966	97	70-135	0	20	mg/kg	09.17.18 16:47	
Diesel Range Organics (DRO)	13.4	999	1040	103	1050	104	70-135	1	20	mg/kg	09.17.18 16:47	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		129		70-135	%	09.17.18 16:47
o-Terphenyl	120		120		70-135	%	09.17.18 16:47

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063623

MB Sample Id: 7662561-1-BLK

Matrix: Solid

LCS Sample Id: 7662561-1-BKS

Prep Method: SW5030B

Date Prep: 09.18.18

LCSD Sample Id: 7662561-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0931	93	0.0896	90	70-130	4	35	mg/kg	09.18.18 08:38	
Toluene	<0.00200	0.0998	0.0939	94	0.0882	88	70-130	6	35	mg/kg	09.18.18 08:38	
Ethylbenzene	<0.00200	0.0998	0.101	101	0.0948	95	70-130	6	35	mg/kg	09.18.18 08:38	
m,p-Xylenes	<0.00399	0.200	0.192	96	0.180	90	70-130	6	35	mg/kg	09.18.18 08:38	
o-Xylene	<0.00200	0.0998	0.0994	100	0.0942	94	70-130	5	35	mg/kg	09.18.18 08:38	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		100		100		70-130	%	09.18.18 08:38
4-Bromofluorobenzene	99		94		93		70-130	%	09.18.18 08:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063623

Parent Sample Id: 598983-013

Matrix: Soil

MS Sample Id: 598983-013 S

Prep Method: SW5030B

Date Prep: 09.18.18

MSD Sample Id: 598983-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0740	73	0.0850	85	70-130	14	35	mg/kg	09.18.18 09:20	
Toluene	<0.00201	0.101	0.0747	74	0.0841	84	70-130	12	35	mg/kg	09.18.18 09:20	
Ethylbenzene	<0.00201	0.101	0.0802	79	0.0893	89	70-130	11	35	mg/kg	09.18.18 09:20	
m,p-Xylenes	<0.00402	0.201	0.152	76	0.170	85	70-130	11	35	mg/kg	09.18.18 09:20	
o-Xylene	<0.00201	0.101	0.0798	79	0.0874	87	70-130	9	35	mg/kg	09.18.18 09:20	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		98		70-130	%	09.18.18 09:20
4-Bromofluorobenzene	94		99		70-130	%	09.18.18 09:20

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

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

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



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

CHAIN OF CUSTODY

Page 1 of 1

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

www.xenco.com

Phoenix, Arizona (480-355-0900)

Client / Reporting Information				Project Information				Analytical Information		Matrix Codes						
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: MD-19 Federal 1				Xenco Quote #		Xenco Job #						
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705				Project Location: Carlsbad, NM												
Email: A.Baker@lternv.com (432) 704-5178				Invoice To: XTO Energy - Kyle Little												
Project Contact: Adrian Baker				PO Number: 2RP-2663												
Sampler's Name: Barbara																
No.	Field ID / Point of Collection	Sample Depth	Date / Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments		
1	SWOT	2'	9/12/18 11:00	S	4											
2	F503	4'	11:10													
3	SW08	2'	15:30													
4																
5																
6																
7																
8																
9																
10																
Turnaround Time (Business days)														Notes:		
☐ Same Day TAT														☐ Level II Std QC	☐ Level IV (Full Data Pkg /raw data)	
☐ Next Day EMERGENCY														☐ Level III Std QC+ Forms	☐ TRRP Level IV	
☐ 2 Day EMERGENCY														☐ Contract TAT	☐ Level 3 (CLP Forms)	☐ UST / RG -411
☐ 3 Day EMERGENCY														☐ TRRP Checklist		
TAT Starts Day received by Lab, if received by 5:00 pm														FED-EX / UPS: Tracking #		
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING CARRIER DELIVERY																
Relinquished by Sampler		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:		
1		9/13/18 07:22		1		9/13/18 15:30		2		9/14/18 15:30		3		9/14/18 15:30		
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:		
3		9/13/18 07:22		3		9/13/18 15:30		4		9/14/18 15:30		5		9/14/18 15:30		
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:		
5		9/13/18 07:22		5		9/13/18 15:30		6		9/14/18 15:30		7		9/14/18 15:30		
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:		
Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.																



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/15/2018 09:00:00 AM

Work Order #: 599237

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 09/17/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 09/17/2018



Certificate of Analysis Summary 599387

LT Environmental, Inc., Arvada, CO

Project Name: ND 19 Federal



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Tue Sep-18-18 09:48 am

Report Date: 19-SEP-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	599387-001	599387-002	599387-003	599387-004	599387-005	599387-006
	Field Id:	FS04	SW09	SW10	SW11	FS05	SW12
	Depth:	4- ft	2- ft	2- ft	2- ft	4- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Sep-14-18 10:30	Sep-14-18 10:35	Sep-14-18 10:40	Sep-14-18 15:50	Sep-14-18 15:55	Sep-14-18 16:00
BTEX by EPA 8021B	Extracted:	Sep-18-18 10:00	Sep-18-18 10:00	Sep-18-18 10:00	Sep-18-18 10:00	Sep-18-18 10:00	Sep-18-18 10:00
	Analyzed:	Sep-18-18 11:22	Sep-18-18 11:42	Sep-18-18 12:03	Sep-18-18 12:23	Sep-18-18 12:43	Sep-18-18 13:04
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00397 0.00397	<0.00402 0.00402	<0.00404 0.00404	<0.00399 0.00399
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300	Extracted:	Sep-18-18 16:30	Sep-18-18 16:30	Sep-18-18 16:30	Sep-18-18 16:30	Sep-18-18 16:30	Sep-18-18 16:30
	Analyzed:	Sep-18-18 21:51	Sep-18-18 22:08	Sep-18-18 22:14	Sep-18-18 22:19	Sep-18-18 22:25	Sep-18-18 22:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		379 5.00	10.4 4.96	70.0 5.00	1160 24.8	851 4.95	703 4.99
TPH By SW8015 Mod	Extracted:	Sep-18-18 14:00	Sep-18-18 14:00	Sep-18-18 14:00	Sep-18-18 14:00	Sep-18-18 14:00	Sep-18-18 14:00
	Analyzed:	Sep-18-18 18:50	Sep-18-18 19:51	Sep-18-18 20:11	Sep-18-18 20:30	Sep-18-18 20:50	Sep-18-18 21:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<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	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 599387

LT Environmental, Inc., Arvada, CO

Project Name: ND 19 Federal



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Tue Sep-18-18 09:48 am

Report Date: 19-SEP-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	599387-007					
	Field Id:	FS06					
	Depth:	4- ft					
	Matrix:	SOIL					
	Sampled:	Sep-14-18 16:05					
BTEX by EPA 8021B	Extracted:	Sep-18-18 10:00					
	Analyzed:	Sep-18-18 13:24					
	Units/RL:	mg/kg RL					
	Benzene	<0.00200 0.00200					
	Toluene	<0.00200 0.00200					
	Ethylbenzene	<0.00200 0.00200					
	m,p-Xylenes	<0.00401 0.00401					
	o-Xylene	<0.00200 0.00200					
	Total Xylenes	<0.00200 0.00200					
	Total BTEX	<0.00200 0.00200					
Chloride by EPA 300	Extracted:	Sep-18-18 16:30					
	Analyzed:	Sep-18-18 22:48					
	Units/RL:	mg/kg RL					
	Chloride	1260 25.0					
TPH By SW8015 Mod	Extracted:	Sep-18-18 14:00					
	Analyzed:	Sep-18-18 21:30					
	Units/RL:	mg/kg RL					
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0					
	Diesel Range Organics (DRO)	<15.0 15.0					
	Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0					
	Total TPH	<15.0 15.0					

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

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Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant

Analytical Report 599387

for
LT Environmental, Inc.

Project Manager: Adrian Baker

ND 19 Federal

19-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

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

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)

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

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



19-SEP-18

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

Reference: XENCO Report No(s): **599387**
ND 19 Federal
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) 599387. 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. 599387 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer
Project Assistant

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Sample Cross Reference 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS04	S	09-14-18 10:30	4 ft	599387-001
SW09	S	09-14-18 10:35	2 ft	599387-002
SW10	S	09-14-18 10:40	2 ft	599387-003
SW11	S	09-14-18 15:50	2 ft	599387-004
FS05	S	09-14-18 15:55	4 ft	599387-005
SW12	S	09-14-18 16:00	2 ft	599387-006
FS06	S	09-14-18 16:05	4 ft	599387-007



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ND 19 Federal*

Project ID:
Work Order Number(s): 599387

Report Date: 19-SEP-18
Date Received: 09/18/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3063658 BTEX by EPA 8021B

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



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS04**
Lab Sample Id: 599387-001

Matrix: Soil
Date Collected: 09.14.18 10.30

Date Received: 09.18.18 09.48
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063657

Date Prep: 09.18.18 16.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	379	5.00	mg/kg	09.18.18 21.51		1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063754

Date Prep: 09.18.18 14.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.18.18 18.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.18.18 18.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.18.18 18.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.18.18 18.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	09.18.18 18.50	
o-Terphenyl	84-15-1	97	%	70-135	09.18.18 18.50	



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS04**
Lab Sample Id: 599387-001

Matrix: Soil
Date Collected: 09.14.18 10.30

Date Received: 09.18.18 09.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063658

Date Prep: 09.18.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.18.18 11.22	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.18.18 11.22	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.18.18 11.22	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.18.18 11.22	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.18.18 11.22	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.18.18 11.22	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.18.18 11.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	09.18.18 11.22		
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.18.18 11.22		



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW09**
Lab Sample Id: 599387-002

Matrix: Soil
Date Collected: 09.14.18 10.35

Date Received: 09.18.18 09.48
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063657

Date Prep: 09.18.18 16.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.4	4.96	mg/kg	09.18.18 22.08		1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063754

Date Prep: 09.18.18 14.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.18.18 19.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.18.18 19.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.18.18 19.51	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.18.18 19.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-135	09.18.18 19.51		
o-Terphenyl	84-15-1	100	%	70-135	09.18.18 19.51		



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW09**
Lab Sample Id: 599387-002

Matrix: Soil
Date Collected: 09.14.18 10.35

Date Received: 09.18.18 09.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063658

Date Prep: 09.18.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.18.18 11.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.18.18 11.42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.18.18 11.42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.18.18 11.42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.18.18 11.42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.18.18 11.42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.18.18 11.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	09.18.18 11.42		
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.18.18 11.42		



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW10**
Lab Sample Id: 599387-003

Matrix: Soil
Date Collected: 09.14.18 10.40

Date Received: 09.18.18 09.48
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063657

Date Prep: 09.18.18 16.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	70.0	5.00	mg/kg	09.18.18 22.14		1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063754

Date Prep: 09.18.18 14.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.18.18 20.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.18.18 20.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.18.18 20.11	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.18.18 20.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	09.18.18 20.11	
o-Terphenyl	84-15-1	102	%	70-135	09.18.18 20.11	



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW10**
Lab Sample Id: 599387-003

Matrix: Soil
Date Collected: 09.14.18 10.40

Date Received: 09.18.18 09.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063658

Date Prep: 09.18.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.18.18 12.03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.18.18 12.03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.18.18 12.03	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.18.18 12.03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.18.18 12.03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.18.18 12.03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.18.18 12.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.18.18 12.03		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.18.18 12.03		



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW11**
Lab Sample Id: 599387-004

Matrix: Soil
Date Collected: 09.14.18 15.50

Date Received: 09.18.18 09.48
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3063657

Date Prep: 09.18.18 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1160	24.8	mg/kg	09.18.18 22.19		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3063754

Date Prep: 09.18.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.18.18 20.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.18.18 20.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.18.18 20.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.18.18 20.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	09.18.18 20.30	
o-Terphenyl	84-15-1	109	%	70-135	09.18.18 20.30	



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW11**
Lab Sample Id: 599387-004

Matrix: Soil
Date Collected: 09.14.18 15.50

Date Received: 09.18.18 09.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.18.18 10.00

Basis: Wet Weight

Seq Number: 3063658

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.18.18 12.23	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.18.18 12.23	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.18.18 12.23	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.18.18 12.23	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.18.18 12.23	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.18.18 12.23	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.18.18 12.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	70-130	09.18.18 12.23		
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.18.18 12.23		



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS05**
Lab Sample Id: 599387-005

Matrix: Soil
Date Collected: 09.14.18 15.55

Date Received: 09.18.18 09.48
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063657

Date Prep: 09.18.18 16.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	851	4.95	mg/kg	09.18.18 22.25		1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063754

Date Prep: 09.18.18 14.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.18.18 20.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.18.18 20.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.18.18 20.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.18.18 20.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-135	09.18.18 20.50		
o-Terphenyl	84-15-1	100	%	70-135	09.18.18 20.50		



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS05**
Lab Sample Id: 599387-005

Matrix: Soil
Date Collected: 09.14.18 15.55

Date Received: 09.18.18 09.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063658

Date Prep: 09.18.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.18.18 12.43	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.18.18 12.43	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.18.18 12.43	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.18.18 12.43	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.18.18 12.43	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.18.18 12.43	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.18.18 12.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	09.18.18 12.43		
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.18.18 12.43		



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW12**
Lab Sample Id: 599387-006

Matrix: Soil
Date Collected: 09.14.18 16.00

Date Received: 09.18.18 09.48
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063657

Date Prep: 09.18.18 16.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	703	4.99	mg/kg	09.18.18 22.42		1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063754

Date Prep: 09.18.18 14.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.18.18 21.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.18.18 21.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.18.18 21.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.18.18 21.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-135	09.18.18 21.10		
o-Terphenyl	84-15-1	100	%	70-135	09.18.18 21.10		



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW12**
Lab Sample Id: 599387-006

Matrix: Soil
Date Collected: 09.14.18 16.00

Date Received: 09.18.18 09.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.18.18 10.00

Basis: Wet Weight

Seq Number: 3063658

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.18.18 13.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.18 13.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.18 13.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.18.18 13.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.18 13.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.18 13.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.18 13.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.18.18 13.04		
4-Bromofluorobenzene	460-00-4	118	%	70-130	09.18.18 13.04		



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS06**
Lab Sample Id: 599387-007

Matrix: Soil
Date Collected: 09.14.18 16.05

Date Received: 09.18.18 09.48
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063657

Date Prep: 09.18.18 16.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1260	25.0	mg/kg	09.18.18 22.48		5

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063754

Date Prep: 09.18.18 14.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.18.18 21.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.18.18 21.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.18.18 21.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.18.18 21.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	09.18.18 21.30	
o-Terphenyl	84-15-1	103	%	70-135	09.18.18 21.30	



Certificate of Analytical Results 599387



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS06**
Lab Sample Id: 599387-007

Matrix: Soil
Date Collected: 09.14.18 16.05

Date Received: 09.18.18 09.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.18.18 10.00

Basis: Wet Weight

Seq Number: 3063658

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.18.18 13.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.18 13.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.18 13.24	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.18.18 13.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.18 13.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.18 13.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.18 13.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.18.18 13.24		
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.18.18 13.24		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

SQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 599387

LT Environmental, Inc. ND 19 Federal

Analytical Method: Chloride by EPA 300

Seq Number: 3063657

MB Sample Id: 7662539-1-BLK

Matrix: Solid

LCS Sample Id: 7662539-1-BKS

Prep Method: E300P

Date Prep: 09.18.18

LCSD Sample Id: 7662539-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	264	106	264	106	90-110	0	20	mg/kg	09.18.18 21:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3063657

Parent Sample Id: 599141-035

Matrix: Soil

MS Sample Id: 599141-035 S

Prep Method: E300P

Date Prep: 09.18.18

MSD Sample Id: 599141-035 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.935	272	278	102	279	103	90-110	0	20	mg/kg	09.18.18 23:16	

Analytical Method: Chloride by EPA 300

Seq Number: 3063657

Parent Sample Id: 599387-001

Matrix: Soil

MS Sample Id: 599387-001 S

Prep Method: E300P

Date Prep: 09.18.18

MSD Sample Id: 599387-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	379	250	627	99	633	102	90-110	1	20	mg/kg	09.18.18 21:56	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3063754

MB Sample Id: 7662563-1-BLK

Matrix: Solid

LCS Sample Id: 7662563-1-BKS

Prep Method: TX1005P

Date Prep: 09.18.18

LCSD Sample Id: 7662563-1-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	1020	102	960	96	70-135	6	20	mg/kg	09.18.18 18:10	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	985	99	70-135	9	20	mg/kg	09.18.18 18:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		124		120		70-135	%	09.18.18 18:10
o-Terphenyl	104		114		102		70-135	%	09.18.18 18:10

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

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

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

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



QC Summary 599387

LT Environmental, Inc.

ND 19 Federal

Analytical Method: TPH By SW8015 Mod

Seq Number: 3063754

Parent Sample Id: 599387-001

Matrix: Soil

MS Sample Id: 599387-001 S

Prep Method: TX1005P

Date Prep: 09.18.18

MSD Sample Id: 599387-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	8.96	999	907	90	924	92	70-135	2	20	mg/kg	09.18.18 19:10	
Diesel Range Organics (DRO)	<8.12	999	957	96	961	96	70-135	0	20	mg/kg	09.18.18 19:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		125		70-135	%	09.18.18 19:10
o-Terphenyl	104		115		70-135	%	09.18.18 19:10

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063658

MB Sample Id: 7662573-1-BLK

Matrix: Solid

LCS Sample Id: 7662573-1-BKS

Prep Method: SW5030B

Date Prep: 09.18.18

LCSD Sample Id: 7662573-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0962	95	0.0877	87	70-130	9	35	mg/kg	09.18.18 08:41	
Toluene	<0.00201	0.101	0.0946	94	0.0938	93	70-130	1	35	mg/kg	09.18.18 08:41	
Ethylbenzene	<0.00201	0.101	0.100	99	0.0997	99	70-130	0	35	mg/kg	09.18.18 08:41	
m,p-Xylenes	<0.00402	0.201	0.194	97	0.193	96	70-130	1	35	mg/kg	09.18.18 08:41	
o-Xylene	<0.00201	0.101	0.0932	92	0.0931	92	70-130	0	35	mg/kg	09.18.18 08:41	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		95		89		70-130	%	09.18.18 08:41
4-Bromofluorobenzene	86		110		115		70-130	%	09.18.18 08:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063658

Parent Sample Id: 599230-003

Matrix: Soil

MS Sample Id: 599230-003 S

Prep Method: SW5030B

Date Prep: 09.18.18

MSD Sample Id: 599230-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0564	57	0.0426	43	70-130	28	35	mg/kg	09.19.18 07:37	X
Toluene	<0.00199	0.0996	0.0435	44	0.0321	32	70-130	30	35	mg/kg	09.19.18 07:37	X
Ethylbenzene	<0.00199	0.0996	0.0349	35	0.0266	27	70-130	27	35	mg/kg	09.19.18 07:37	X
m,p-Xylenes	<0.00398	0.199	0.0672	34	0.0522	26	70-130	25	35	mg/kg	09.19.18 07:37	X
o-Xylene	<0.00199	0.0996	0.0330	33	0.0256	26	70-130	25	35	mg/kg	09.19.18 07:37	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		97		70-130	%	09.19.18 07:37
4-Bromofluorobenzene	111		123		70-130	%	09.19.18 07:37

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

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

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

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



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

CHAIN OF CUSTODY

Page 1 of 1

San Antonio, Texas (210-609-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information				Project Information				Analytical Information				Matrix Codes	
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: MID 19 Federal				Xenco Quote #				Xenco Job #	
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705				Project Location: Carlsbad, NM				Xenco Job #				Xenco Job #	
Email: Abaker@ltenv.com (432) 704-5178				Invoice To: XTO Energy - Kyle Little				Xenco Job #				Xenco Job #	
Project Contact: Adrian Baker				PO Number: 28P-2663				Xenco Job #				Xenco Job #	
Sampler's Name: Ben Betth				Collector: 28P-2663				Xenco Job #				Xenco Job #	
Field ID / Point of Collection				Sample Depth				Date				Time	
1				4'				9/14/18				10:30	
2				2'				9/14/18				10:35	
3				2'				9/14/18				10:40	
4				2'				9/14/18				10:50	
5				4'				9/14/18				1:55	
6				2'				9/14/18				1:00	
7				4'				9/14/18				1:05	
8													
9													
10													
Turnaround Time (Business days)				Data Deliverable Information				Notes:					
☒ Same Day TAT				☐ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg / raw data)	
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC + Forms				☐ TRRP Level IV	
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG 411	
☐ 3 Day EMERGENCY								☐ TRRP Checklist					
TAT Starts Day received by Lab, if received by 5:00 pm													
Relinquished by Sampler:				SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING QUANTITATIVE DELIVERY				FED-EX / UPS: Tracking #					
1				Date Time: 9/14/18 17:20				Received By: [Signature]				Date Time: 9/17/18 16:30	
2				Date Time: 9/14/18 17:20				Relinquished By: [Signature]				Date Time: 9/17/18 16:30	
3				Date Time: 9/14/18 17:20				Received By: [Signature]				Date Time: 9/17/18 16:30	
4				Date Time: 9/14/18 17:20				Relinquished By: [Signature]				Date Time: 9/17/18 16:30	
5				Date Time: 9/14/18 17:20				Received By: [Signature]				Date Time: 9/17/18 16:30	
Relinquished by:				Date Time:				Custody Seal #				Preserved where applicable	
5				Date Time:				Custody Seal #				Preserved where applicable	

Field Comments

W = Water
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

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ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD NM 88220
UNITED STATES US

SHIP DATE: 17SEP18
ACTWGT: 36.00 LB
CAD: 10183706/INET14040
DIMS: 19x13x16 IN
BILL RECIPIENT

TO HOLD FOR XENCO

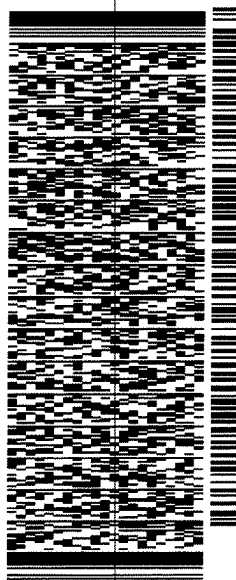
FEDEX EXPRESS SHIP CENTER
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MIDLAND TX 79711

(806) 794-1296
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J182118001501uv

552J1/F78C/DCA5

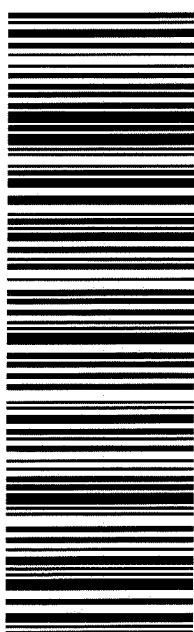
TRK# 7828 1189 6420
0201

STANDARD OVERNIGHT

TUE - 18 SEP HOLD

41 MAFA

HLD
MAFA
TX-US LBB



After printing this label:

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

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/18/2018 09:48:00 AM

Work Order #: 599387

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 09/18/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 09/18/2018

Analytical Report 599689

for
LT Environmental, Inc.

Project Manager: Adrian Baker

ND 19 Federal

21-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



21-SEP-18

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

Reference: XENCO Report No(s): **599689**
ND 19 Federal
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) 599689. 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. 599689 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW13	S	09-17-18 10:00	2 ft	599689-001
FS07	S	09-17-18 10:50	4 ft	599689-002
SW14	S	09-17-18 14:10	2 ft	599689-003
SW15	S	09-17-18 15:00	2 ft	599689-004
SW16	S	09-17-18 16:05	2 ft	599689-005
FS08	S	09-17-18 16:10	4 ft	599689-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ND 19 Federal*

Project ID:
Work Order Number(s): 599689

Report Date: 21-SEP-18
Date Received: 09/20/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3064021 BTEX by EPA 8021B

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

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

Samples affected are: 599689-002,599689-005,599689-004,599689-003.

Batch: LBA-3064034 BTEX by EPA 8021B

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



Certificate of Analysis Summary 599689

LT Environmental, Inc., Arvada, CO

Project Name: ND 19 Federal



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Thu Sep-20-18 10:55 am

Report Date: 21-SEP-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	599689-001	599689-002	599689-003	599689-004	599689-005	599689-006
	<i>Field Id:</i>	SW13	FS07	SW14	SW15	SW16	FS08
	<i>Depth:</i>	2- ft	4- ft	2- ft	2- ft	2- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-17-18 10:00	Sep-17-18 10:50	Sep-17-18 14:10	Sep-17-18 15:00	Sep-17-18 16:05	Sep-17-18 16:10
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-20-18 15:00	Sep-20-18 15:00	Sep-20-18 15:00	Sep-20-18 15:00	Sep-20-18 15:00	*** ** *
	<i>Analyzed:</i>	Sep-21-18 07:50	Sep-21-18 08:10	Sep-21-18 08:30	Sep-21-18 08:51	Sep-21-18 09:11	Sep-20-18 16:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00397 0.00397	<0.00398 0.00398	<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Inorganic Anions by EPA 300	<i>Extracted:</i>	Sep-20-18 17:00	Sep-20-18 17:00	Sep-20-18 17:30	Sep-20-18 17:30	Sep-20-18 17:30	Sep-20-18 17:30
	<i>Analyzed:</i>	Sep-20-18 23:52	Sep-20-18 23:58	Sep-21-18 00:49	Sep-21-18 00:55	Sep-21-18 01:01	Sep-21-18 01:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		355 4.98	381 5.01	143 4.96	39.3 5.00	284 4.98	229 4.99
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-20-18 13:00	Sep-20-18 13:00	Sep-20-18 13:00	Sep-20-18 13:00	Sep-20-18 13:00	Sep-20-18 14:00
	<i>Analyzed:</i>	Sep-20-18 19:18	Sep-20-18 19:37	Sep-20-18 19:55	Sep-20-18 20:14	Sep-20-18 20:32	Sep-20-18 21:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW13**
Lab Sample Id: 599689-001

Matrix: Soil
Date Collected: 09.17.18 10.00

Date Received: 09.20.18 10.55
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3063959

Date Prep: 09.20.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	355	4.98	mg/kg	09.20.18 23.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064015

Date Prep: 09.20.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.20.18 19.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.20.18 19.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.20.18 19.18	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.20.18 19.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.20.18 19.18	
o-Terphenyl	84-15-1	100	%	70-135	09.20.18 19.18	



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW13**
Lab Sample Id: 599689-001

Matrix: Soil
Date Collected: 09.17.18 10.00

Date Received: 09.20.18 10.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064021

Date Prep: 09.20.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.21.18 07.50	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.21.18 07.50	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.21.18 07.50	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.21.18 07.50	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.21.18 07.50	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.21.18 07.50	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.21.18 07.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.21.18 07.50		
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.21.18 07.50		



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS07**
Lab Sample Id: 599689-002

Matrix: Soil
Date Collected: 09.17.18 10.50

Date Received: 09.20.18 10.55
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063959

Date Prep: 09.20.18 17.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	381	5.01	mg/kg	09.20.18 23.58		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3064015

Date Prep: 09.20.18 13.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.20.18 19.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.20.18 19.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.20.18 19.37	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.20.18 19.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	115	%	70-135	09.20.18 19.37		
o-Terphenyl	84-15-1	117	%	70-135	09.20.18 19.37		



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS07**
Lab Sample Id: 599689-002

Matrix: Soil
Date Collected: 09.17.18 10.50

Date Received: 09.20.18 10.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064021

Date Prep: 09.20.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.21.18 08.10	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.21.18 08.10	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.21.18 08.10	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.21.18 08.10	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.21.18 08.10	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.21.18 08.10	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.21.18 08.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	165	%	70-130	09.21.18 08.10	**	
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.21.18 08.10		



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW14**
Lab Sample Id: 599689-003

Matrix: Soil
Date Collected: 09.17.18 14.10

Date Received: 09.20.18 10.55
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3063966

Date Prep: 09.20.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	143	4.96	mg/kg	09.21.18 00.49		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064015

Date Prep: 09.20.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.20.18 19.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.20.18 19.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.20.18 19.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.20.18 19.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	09.20.18 19.55	
o-Terphenyl	84-15-1	101	%	70-135	09.20.18 19.55	



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW14**
Lab Sample Id: 599689-003

Matrix: Soil
Date Collected: 09.17.18 14.10

Date Received: 09.20.18 10.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.20.18 15.00

Basis: Wet Weight

Seq Number: 3064021

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.21.18 08.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.21.18 08.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.21.18 08.30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.21.18 08.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.21.18 08.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.21.18 08.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.21.18 08.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	09.21.18 08.30		
4-Bromofluorobenzene	460-00-4	138	%	70-130	09.21.18 08.30	**	



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW15**
Lab Sample Id: 599689-004

Matrix: Soil
Date Collected: 09.17.18 15.00

Date Received: 09.20.18 10.55
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3063966

Date Prep: 09.20.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.3	5.00	mg/kg	09.21.18 00.55		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064015

Date Prep: 09.20.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.20.18 20.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.20.18 20.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.20.18 20.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.20.18 20.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	09.20.18 20.14	
o-Terphenyl	84-15-1	99	%	70-135	09.20.18 20.14	



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW15**
Lab Sample Id: 599689-004

Matrix: Soil
Date Collected: 09.17.18 15.00

Date Received: 09.20.18 10.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064021

Date Prep: 09.20.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.21.18 08.51	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.21.18 08.51	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.21.18 08.51	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.21.18 08.51	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.21.18 08.51	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.21.18 08.51	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.21.18 08.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.21.18 08.51		
4-Bromofluorobenzene	460-00-4	153	%	70-130	09.21.18 08.51	**	



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW16**
Lab Sample Id: 599689-005

Matrix: Soil
Date Collected: 09.17.18 16.05

Date Received: 09.20.18 10.55
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063966

Date Prep: 09.20.18 17.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	284	4.98	mg/kg	09.21.18 01.01		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3064015

Date Prep: 09.20.18 13.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.20.18 20.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.20.18 20.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.20.18 20.32	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.20.18 20.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	101	%	70-135	09.20.18 20.32		
o-Terphenyl	84-15-1	100	%	70-135	09.20.18 20.32		



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SW16**
Lab Sample Id: 599689-005

Matrix: Soil
Date Collected: 09.17.18 16.05

Date Received: 09.20.18 10.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.20.18 15.00

Basis: Wet Weight

Seq Number: 3064021

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.21.18 09.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.21.18 09.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.21.18 09.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.21.18 09.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.21.18 09.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.21.18 09.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.21.18 09.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	161	%	70-130	09.21.18 09.11	**	
1,4-Difluorobenzene	540-36-3	84	%	70-130	09.21.18 09.11		



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS08**
Lab Sample Id: 599689-006

Matrix: Soil
Date Collected: 09.17.18 16.10

Date Received: 09.20.18 10.55
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3063966

Date Prep: 09.20.18 17.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	229	4.99	mg/kg	09.21.18 01.06		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3064020

Date Prep: 09.20.18 14.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.20.18 21.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.20.18 21.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.20.18 21.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.20.18 21.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	101	%	70-135	09.20.18 21.49		
o-Terphenyl	84-15-1	100	%	70-135	09.20.18 21.49		



Certificate of Analytical Results 599689



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS08**
Lab Sample Id: 599689-006

Matrix: Soil
Date Collected: 09.17.18 16.10

Date Received: 09.20.18 10.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064034

Date Prep: 09.20.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.20.18 16.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.20.18 16.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.20.18 16.11	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.20.18 16.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.20.18 16.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.20.18 16.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.20.18 16.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	86	%	70-130	09.20.18 16.11		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.20.18 16.11		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 599689

LT Environmental, Inc. ND 19 Federal

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063959

MB Sample Id: 7662723-1-BLK

Matrix: Solid

LCS Sample Id: 7662723-1-BKS

Prep Method: E300P

Date Prep: 09.20.18

LCSD Sample Id: 7662723-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	256	102	256	102	90-110	0	20	mg/kg	09.20.18 21:13	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063966

MB Sample Id: 7662724-1-BLK

Matrix: Solid

LCS Sample Id: 7662724-1-BKS

Prep Method: E300P

Date Prep: 09.20.18

LCSD Sample Id: 7662724-1-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	257	103	258	103	90-110	0	20	mg/kg	09.21.18 00:21	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063959

Parent Sample Id: 599685-003

Matrix: Soil

MS Sample Id: 599685-003 S

Prep Method: E300P

Date Prep: 09.20.18

MSD Sample Id: 599685-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	44.8	250	311	106	314	108	90-110	1	20	mg/kg	09.20.18 21:30	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063959

Parent Sample Id: 599685-006

Matrix: Soil

MS Sample Id: 599685-006 S

Prep Method: E300P

Date Prep: 09.20.18

MSD Sample Id: 599685-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	681	249	906	90	908	91	90-110	0	20	mg/kg	09.20.18 22:50	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063966

Parent Sample Id: 599292-002

Matrix: Soil

MS Sample Id: 599292-002 S

Prep Method: E300P

Date Prep: 09.20.18

MSD Sample Id: 599292-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	136	261	410	105	409	105	90-110	0	20	mg/kg	09.21.18 01:57	

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

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

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

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



QC Summary 599689

LT Environmental, Inc.

ND 19 Federal

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063966

Parent Sample Id: 599687-003

Matrix: Soil

MS Sample Id: 599687-003 S

Prep Method: E300P

Date Prep: 09.20.18

MSD Sample Id: 599687-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	312	249	562	100	564	101	90-110	0	20	mg/kg	09.21.18 00:38	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064015

MB Sample Id: 7662726-1-BLK

Matrix: Solid

LCS Sample Id: 7662726-1-BKS

Prep Method: TX1005P

Date Prep: 09.20.18

LCSD Sample Id: 7662726-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	989	99	976	98	70-135	1	20	mg/kg	09.20.18 14:00	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	1060	106	70-135	1	20	mg/kg	09.20.18 14:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		120		123		70-135	%	09.20.18 14:00
o-Terphenyl	116		107		116		70-135	%	09.20.18 14:00

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064020

MB Sample Id: 7662729-1-BLK

Matrix: Solid

LCS Sample Id: 7662729-1-BKS

Prep Method: TX1005P

Date Prep: 09.20.18

LCSD Sample Id: 7662729-1-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	965	97	967	97	70-135	0	20	mg/kg	09.20.18 15:11	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1000	100	70-135	1	20	mg/kg	09.20.18 15:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		112		121		70-135	%	09.20.18 15:11
o-Terphenyl	115		104		111		70-135	%	09.20.18 15:11

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064015

Parent Sample Id: 599685-001

Matrix: Soil

MS Sample Id: 599685-001 S

Prep Method: TX1005P

Date Prep: 09.20.18

MSD Sample Id: 599685-001 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)	<7.97	996	900	90	919	92	70-135	2	20	mg/kg	09.20.18 14:56	
Diesel Range Organics (DRO)	<8.10	996	998	100	1020	102	70-135	2	20	mg/kg	09.20.18 14:56	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		127		70-135	%	09.20.18 14:56
o-Terphenyl	123		121		70-135	%	09.20.18 14:56

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

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

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

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



QC Summary 599689

LT Environmental, Inc.

ND 19 Federal

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064020

Parent Sample Id: 599688-001

Matrix: Soil

MS Sample Id: 599688-001 S

Prep Method: TX1005P

Date Prep: 09.20.18

MSD Sample Id: 599688-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	948	95	918	92	70-135	3	20	mg/kg	09.20.18 16:11	
Diesel Range Organics (DRO)	<8.12	999	975	98	948	95	70-135	3	20	mg/kg	09.20.18 16:11	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		122		70-135	%	09.20.18 16:11
o-Terphenyl	114		106		70-135	%	09.20.18 16:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064034

MB Sample Id: 7662754-1-BLK

Matrix: Solid

LCS Sample Id: 7662754-1-BKS

Prep Method: SW5030B

Date Prep: 09.20.18

LCSD Sample Id: 7662754-1-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	0.0730	72	0.0735	73	70-130	1	35	mg/kg	09.20.18 08:44	
Toluene	<0.00202	0.101	0.0726	72	0.0726	72	70-130	0	35	mg/kg	09.20.18 08:44	
Ethylbenzene	<0.00202	0.101	0.0818	81	0.0813	80	70-130	1	35	mg/kg	09.20.18 08:44	
m,p-Xylenes	<0.00403	0.202	0.157	78	0.155	77	70-130	1	35	mg/kg	09.20.18 08:44	
o-Xylene	<0.00202	0.101	0.0815	81	0.0804	80	70-130	1	35	mg/kg	09.20.18 08:44	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		92		87		70-130	%	09.20.18 08:44
4-Bromofluorobenzene	86		101		99		70-130	%	09.20.18 08:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064021

MB Sample Id: 7662761-1-BLK

Matrix: Solid

LCS Sample Id: 7662761-1-BKS

Prep Method: SW5030B

Date Prep: 09.20.18

LCSD Sample Id: 7662761-1-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	0.0988	98	0.0890	88	70-130	10	35	mg/kg	09.20.18 23:45	
Toluene	<0.00202	0.101	0.0926	92	0.0834	83	70-130	10	35	mg/kg	09.20.18 23:45	
Ethylbenzene	<0.00202	0.101	0.101	100	0.0914	90	70-130	10	35	mg/kg	09.20.18 23:45	
m,p-Xylenes	<0.00403	0.202	0.215	106	0.194	96	70-130	10	35	mg/kg	09.20.18 23:45	
o-Xylene	<0.00202	0.101	0.102	101	0.0976	97	70-130	4	35	mg/kg	09.20.18 23:45	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	74		89		86		70-130	%	09.20.18 23:45
4-Bromofluorobenzene	125		118		130		70-130	%	09.20.18 23:45

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

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

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

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



QC Summary 599689

LT Environmental, Inc.

ND 19 Federal

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064034

Parent Sample Id: 599386-011

Matrix: Soil

MS Sample Id: 599386-011 S

Prep Method: SW5030B

Date Prep: 09.20.18

MSD Sample Id: 599386-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0591	59	0.0580	58	70-130	2	35	mg/kg	09.20.18 09:25	X
Toluene	<0.00199	0.0994	0.0574	58	0.0567	57	70-130	1	35	mg/kg	09.20.18 09:25	X
Ethylbenzene	<0.00199	0.0994	0.0650	65	0.0644	65	70-130	1	35	mg/kg	09.20.18 09:25	X
m,p-Xylenes	<0.00398	0.199	0.125	63	0.123	62	70-130	2	35	mg/kg	09.20.18 09:25	X
o-Xylene	<0.00199	0.0994	0.0647	65	0.0641	64	70-130	1	35	mg/kg	09.20.18 09:25	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		129		70-130	%	09.20.18 09:25
4-Bromofluorobenzene	110		99		70-130	%	09.20.18 09:25

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064021

Parent Sample Id: 599685-001

Matrix: Soil

MS Sample Id: 599685-001 S

Prep Method: SW5030B

Date Prep: 09.20.18

MSD Sample Id: 599685-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0814	81	0.0777	78	70-130	5	35	mg/kg	09.21.18 00:26	
Toluene	<0.00202	0.101	0.0778	77	0.0731	73	70-130	6	35	mg/kg	09.21.18 00:26	
Ethylbenzene	<0.00202	0.101	0.0841	83	0.0765	77	70-130	9	35	mg/kg	09.21.18 00:26	
m,p-Xylenes	<0.00403	0.202	0.178	88	0.162	81	70-130	9	35	mg/kg	09.21.18 00:26	
o-Xylene	<0.00202	0.101	0.0871	86	0.0794	79	70-130	9	35	mg/kg	09.21.18 00:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	81		82		70-130	%	09.21.18 00:26
4-Bromofluorobenzene	129		130		70-130	%	09.21.18 00:26

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



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Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: B2663 ND19 Federal											
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705				Project Location: Carlsbad, NM											
Email: Abaker@ltenv.com Phone No: (432) 704-5178				Invoice To: XTO Energy - Kyle Littlell											
Project Contact: Adrian Baker				PO Number: 2KRP-2663											
Sampler's Name: Ben Bell															
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Field Comments
1	SW13	2'	9/17/18	1000	S	1									BTEX EPA 8020 TPH EPA 8015 Chlorides 320.1
2	FS07	4'		1050											
3	SW14	2'		1410											
4	SW15	2'		1500											
5	SW16	2'		1605											
6	FS08	4'		1610											
7															
8															
9															
10															
Turnaround Time (Business days)		Data Deliverable Information		Notes:											
☒ Same Day TAT		☐ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg / raw data)									
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV									
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG 411									
☐ 3 Day EMERGENCY		☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm															
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURTESY DELIVERY															
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:	
1		9/17/18 1705		1		9/19/18 1410		2		9/19/18 1530		3		9/20/18 1055	
3		Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:	
5		Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:	
Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.															

ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD, NM 88220
UNITED STATES US

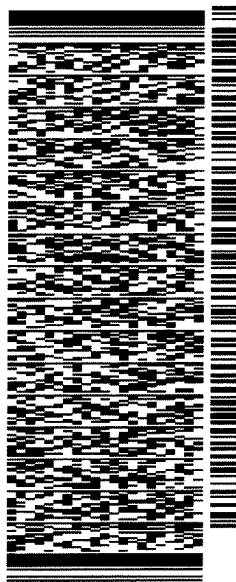
SHIP DATE: 19SEP18
ACTWT: 49.00 LB
CAD: 101813706IN/ET 4040
DIMS: 24x16x16 IN
BILL RECIPIENT

TO HOLD FOR XENCO

FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S

MIDLAND TX 79711
(806) 794-1236
REF:
PO: DEPT:

552J1F78C/DCA5



J182118061501uv

THU - 20 SEP HOLD

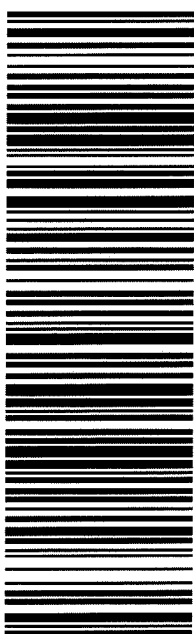
TRK# 7732 7701 1476
0201

STANDARD OVERNIGHT

HLD

41 MAFA

MAFA
TX-US LBB



After printing this label:

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

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/20/2018 10:55:00 AM

Work Order #: 599689

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 09/20/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 09/20/2018

Analytical Report 599988

for
LT Environmental, Inc.

Project Manager: Adrian Baker

ND 19 Federal

02-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



02-OCT-18

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

Reference: XENCO Report No(s): **599988**
ND 19 Federal
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) 599988. 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. 599988 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer
Project Assistant

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

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

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



Sample Cross Reference 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS09	S	09-20-18 13:40	4 ft	599988-001
SS06	S	09-20-18 13:45	6 In	599988-002
SS07	S	09-20-18 13:50	6 In	599988-003
SS08	S	09-20-18 13:55	6 In	599988-004
SS09	S	09-20-18 14:00	6 In	599988-005



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ND 19 Federal*

Project ID:
Work Order Number(s): 599988

Report Date: 02-OCT-18
Date Received: 09/22/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3064877 BTEX by EPA 8021B

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



Certificate of Analysis Summary 599988

LT Environmental, Inc., Arvada, CO

Project Name: ND 19 Federal



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Sat Sep-22-18 09:00 am

Report Date: 02-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	599988-001	599988-002	599988-003	599988-004	599988-005	
	Field Id:	FS09	SS06	SS07	SS08	SS09	
	Depth:	4- ft	6- In	6- In	6- In	6- In	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Sep-20-18 13:40	Sep-20-18 13:45	Sep-20-18 13:50	Sep-20-18 13:55	Sep-20-18 14:00	
BTEX by EPA 8021B	Extracted:	Sep-28-18 16:15	Sep-28-18 16:15	Sep-28-18 16:15	Sep-28-18 16:15	Sep-28-18 16:15	
	Analyzed:	Sep-29-18 08:31	Sep-29-18 08:53	Sep-29-18 09:13	Sep-29-18 09:34	Sep-29-18 10:12	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	
m,p-Xylenes		<0.00402 0.00402	<0.00404 0.00404	<0.00398 0.00398	<0.00399 0.00399	<0.00403 0.00403	
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	
Inorganic Anions by EPA 300	Extracted:	Sep-25-18 16:00	Sep-25-18 16:00	Sep-25-18 16:00	Sep-25-18 16:00	Sep-25-18 16:00	
	Analyzed:	Sep-25-18 20:34	Sep-25-18 20:39	Sep-25-18 20:45	Sep-25-18 21:02	Sep-25-18 21:08	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Chloride		272 4.98	79.6 5.00	14.8 5.00	<4.95 4.95	<4.97 4.97	
TPH by SW8015 Mod	Extracted:	Sep-25-18 14:00	Sep-25-18 14:00	Sep-24-18 14:00	Sep-24-18 14:00	Sep-24-18 14:00	
	Analyzed:	Sep-26-18 06:22	Sep-26-18 06:41	Sep-25-18 13:01	Sep-25-18 13:19	Sep-25-18 13:38	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	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	<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	
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS09**
Lab Sample Id: 599988-001

Matrix: Soil
Date Collected: 09.20.18 13.40

Date Received: 09.22.18 09.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3064441

Date Prep: 09.25.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	272	4.98	mg/kg	09.25.18 20.34		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064467

Date Prep: 09.25.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.26.18 06.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.26.18 06.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.26.18 06.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.26.18 06.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	09.26.18 06.22	
o-Terphenyl	84-15-1	94	%	70-135	09.26.18 06.22	



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **FS09**
Lab Sample Id: 599988-001

Matrix: Soil
Date Collected: 09.20.18 13.40

Date Received: 09.22.18 09.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.28.18 16.15

Basis: Wet Weight

Seq Number: 3064877

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.29.18 08.31	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.29.18 08.31	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.29.18 08.31	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.29.18 08.31	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.29.18 08.31	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.29.18 08.31	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.29.18 08.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.29.18 08.31		
4-Bromofluorobenzene	460-00-4	101	%	70-130	09.29.18 08.31		



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SS06**
Lab Sample Id: 599988-002

Matrix: Soil
Date Collected: 09.20.18 13.45

Date Received: 09.22.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3064441

Date Prep: 09.25.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	79.6	5.00	mg/kg	09.25.18 20.39		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064467

Date Prep: 09.25.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.26.18 06.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.26.18 06.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.26.18 06.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.26.18 06.41	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	94	%	70-135	09.26.18 06.41	
84-15-1	96	%	70-135	09.26.18 06.41	



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SS06**
Lab Sample Id: 599988-002

Matrix: Soil
Date Collected: 09.20.18 13.45

Date Received: 09.22.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064877

Date Prep: 09.28.18 16.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.29.18 08.53	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.29.18 08.53	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.29.18 08.53	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.29.18 08.53	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.29.18 08.53	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.29.18 08.53	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.29.18 08.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.29.18 08.53		
1,4-Difluorobenzene	540-36-3	105	%	70-130	09.29.18 08.53		



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SS07** Matrix: Soil Date Received: 09.22.18 09.00
Lab Sample Id: 599988-003 Date Collected: 09.20.18 13.50 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 09.25.18 16.00 Basis: Wet Weight
Seq Number: 3064441

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.8	5.00	mg/kg	09.25.18 20.45		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight
Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 13.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 13.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 13.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 13.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.25.18 13.01	
o-Terphenyl	84-15-1	98	%	70-135	09.25.18 13.01	



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SS07**
Lab Sample Id: 599988-003

Matrix: Soil
Date Collected: 09.20.18 13.50

Date Received: 09.22.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064877

Date Prep: 09.28.18 16.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.29.18 09.13	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.29.18 09.13	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.29.18 09.13	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.29.18 09.13	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.29.18 09.13	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.29.18 09.13	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.29.18 09.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	09.29.18 09.13		
4-Bromofluorobenzene	460-00-4	100	%	70-130	09.29.18 09.13		



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SS08**
Lab Sample Id: 599988-004

Matrix: Soil
Date Collected: 09.20.18 13.55

Date Received: 09.22.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3064441

Date Prep: 09.25.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.25.18 21.02	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064381

Date Prep: 09.24.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 13.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 13.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 13.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 13.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	09.25.18 13.19	
o-Terphenyl	84-15-1	99	%	70-135	09.25.18 13.19	



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SS08**
Lab Sample Id: 599988-004

Matrix: Soil
Date Collected: 09.20.18 13.55

Date Received: 09.22.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064877

Date Prep: 09.28.18 16.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.29.18 09.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.29.18 09.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.29.18 09.34	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.29.18 09.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.29.18 09.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.29.18 09.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.29.18 09.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.29.18 09.34		
1,4-Difluorobenzene	540-36-3	109	%	70-130	09.29.18 09.34		



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SS09**
Lab Sample Id: 599988-005

Matrix: Soil
Date Collected: 09.20.18 14.00

Date Received: 09.22.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3064441

Date Prep: 09.25.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	09.25.18 21.08	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064381

Date Prep: 09.24.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 13.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 13.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 13.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 13.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.25.18 13.38	
o-Terphenyl	84-15-1	92	%	70-135	09.25.18 13.38	



Certificate of Analytical Results 599988



LT Environmental, Inc., Arvada, CO

ND 19 Federal

Sample Id: **SS09**
Lab Sample Id: 599988-005

Matrix: Soil
Date Collected: 09.20.18 14.00

Date Received: 09.22.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064877

Date Prep: 09.28.18 16.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.29.18 10.12	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.29.18 10.12	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.29.18 10.12	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.29.18 10.12	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.29.18 10.12	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.29.18 10.12	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.29.18 10.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	09.29.18 10.12		
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.29.18 10.12		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 599988

LT Environmental, Inc. ND 19 Federal

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064441

MB Sample Id: 7662975-1-BLK

Matrix: Solid

LCS Sample Id: 7662975-1-BKS

Prep Method: E300P

Date Prep: 09.25.18

LCSD Sample Id: 7662975-1-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	258	103	258	103	90-110	0	20	mg/kg	09.25.18 20:00	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064441

Parent Sample Id: 599898-003

Matrix: Soil

MS Sample Id: 599898-003 S

Prep Method: E300P

Date Prep: 09.25.18

MSD Sample Id: 599898-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	236	249	487	101	493	103	90-110	1	20	mg/kg	09.25.18 21:36	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064441

Parent Sample Id: 599898-002

Matrix: Soil

MS Sample Id: 599898-002 S

Prep Method: E300P

Date Prep: 09.25.18

MSD Sample Id: 599898-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	26.8	250	288	104	289	105	90-110	0	20	mg/kg	09.25.18 20:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064381

MB Sample Id: 7662957-1-BLK

Matrix: Solid

LCS Sample Id: 7662957-1-BKS

Prep Method: TX1005P

Date Prep: 09.24.18

LCSD Sample Id: 7662957-1-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	967	97	1020	102	70-135	5	20	mg/kg	09.24.18 23:21	
Diesel Range Organics (DRO)	<8.13	1000	993	99	1060	106	70-135	7	20	mg/kg	09.24.18 23:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		122		128		70-135	%	09.24.18 23:21
o-Terphenyl	109		115		126		70-135	%	09.24.18 23:21

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

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

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

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



QC Summary 599988

LT Environmental, Inc. ND 19 Federal

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064467

MB Sample Id: 7662999-1-BLK

Matrix: Solid

LCS Sample Id: 7662999-1-BKS

Prep Method: TX1005P

Date Prep: 09.25.18

LCSD Sample Id: 7662999-1-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	988	99	1040	104	70-135	5	20	mg/kg	09.26.18 02:19	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1060	106	70-135	5	20	mg/kg	09.26.18 02:19	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	99		122		125		70-135	%	09.26.18 02:19			
o-Terphenyl	104		120		124		70-135	%	09.26.18 02:19			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064381

Parent Sample Id: 599985-021

Matrix: Soil

MS Sample Id: 599985-021 S

Prep Method: TX1005P

Date Prep: 09.24.18

MSD Sample Id: 599985-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.98	997	925	93	916	92	70-135	1	20	mg/kg	09.25.18 00:18	
Diesel Range Organics (DRO)	<8.10	997	951	95	937	94	70-135	1	20	mg/kg	09.25.18 00:18	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			117		114		70-135	%	09.25.18 00:18			
o-Terphenyl			109		111		70-135	%	09.25.18 00:18			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064467

Parent Sample Id: 599987-001

Matrix: Soil

MS Sample Id: 599987-001 S

Prep Method: TX1005P

Date Prep: 09.25.18

MSD Sample Id: 599987-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	8.14	998	898	89	916	91	70-135	2	20	mg/kg	09.26.18 03:15	
Diesel Range Organics (DRO)	<8.11	998	915	92	936	94	70-135	2	20	mg/kg	09.26.18 03:15	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			110		118		70-135	%	09.26.18 03:15			
o-Terphenyl			101		106		70-135	%	09.26.18 03:15			

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

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

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

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



QC Summary 599988

LT Environmental, Inc. ND 19 Federal

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064877

MB Sample Id: 7663273-1-BLK

Matrix: Solid

LCS Sample Id: 7663273-1-BKS

Prep Method: SW5030B

Date Prep: 09.28.18

LCSD Sample Id: 7663273-1-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	0.0905	90	0.0908	91	70-130	0	35	mg/kg	09.29.18 06:11	
Toluene	<0.00202	0.101	0.0848	84	0.0836	84	70-130	1	35	mg/kg	09.29.18 06:11	
Ethylbenzene	<0.00202	0.101	0.0966	96	0.0972	97	70-130	1	35	mg/kg	09.29.18 06:11	
m,p-Xylenes	<0.00404	0.202	0.186	92	0.185	92	70-130	1	35	mg/kg	09.29.18 06:11	
o-Xylene	<0.00202	0.101	0.0968	96	0.0971	97	70-130	0	35	mg/kg	09.29.18 06:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		110		110		70-130	%	09.29.18 06:11
4-Bromofluorobenzene	91		103		108		70-130	%	09.29.18 06:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064877

Parent Sample Id: 599988-001

Matrix: Soil

MS Sample Id: 599988-001 S

Prep Method: SW5030B

Date Prep: 09.28.18

MSD Sample Id: 599988-001 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	0.0860	86	0.0831	83	70-130	3	35	mg/kg	09.29.18 06:53	
Toluene	<0.00199	0.0996	0.0793	80	0.0788	79	70-130	1	35	mg/kg	09.29.18 06:53	
Ethylbenzene	<0.00199	0.0996	0.0886	89	0.0886	89	70-130	0	35	mg/kg	09.29.18 06:53	
m,p-Xylenes	<0.00398	0.199	0.167	84	0.169	85	70-130	1	35	mg/kg	09.29.18 06:53	
o-Xylene	<0.00199	0.0996	0.0866	87	0.0877	88	70-130	1	35	mg/kg	09.29.18 06:53	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		117		70-130	%	09.29.18 06:53
4-Bromofluorobenzene	109		110		70-130	%	09.29.18 06:53

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

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

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

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

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Xenco Quote #

Xenco Job #

509180

Matrix Codes

Client / Reporting Information						Project Information								Analytical Information							Matrix Codes		
Company Name / Branch: LT Environmental, Inc. - Permian Office Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705 Email: Abaker@ltenv.com Project Contact: Adrian Baker Phone No.: (432) 704-5178						Project Name/Number: ND 19 Federal Project Location: Carlsbad, NM Invoice To: XTO Energy - Kyle Littrell PO Number: ZKR-2663																	
No.	Field ID / Point of Collection	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX EPA 8020	TPH EPA 8015	Chlorides 3001							
1	E509	4'	9/29/18	1340	S	I								X	X	X							
2	S506	6"		1345										X	X	X							
3	S507	6"		1350										X	X	X							
4	S508	6"		1355										X	X	X							
5	S509	6"		1400										X	X	X							
6																							
7																							
8																							
9																							
10																							
Turnaround Time (Business days)						Data Deliverable Information						Notes:											
☐ Same Day TAT						☒ 5 Day TAT						☐ Level II Std QC						☐ Level IV (Full Data Pkg /raw data)					
☐ Next Day EMERGENCY						☐ 7 Day TAT						☐ Level III Std QC+ Forms						☐ TRRP Level IV					
☐ 2 Day EMERGENCY						☐ Contract TAT						☐ Level 3 (CLP Forms)						☐ UST / RG 411					
☐ 3 Day EMERGENCY												☐ TRRP Checklist											
TAT Starts Day received by Lab, if received by 5:00 pm												FED-EX / UPS Tracking #						7702974107767					
Relinquished By Sampler:						Date Time: 9/29/18 17:25						Received By:						Date Time: 9/29/18 15:30					
Relinquished By:						Date Time:						Received By:						Date Time:					
Relinquished By:						Date Time:						Received By:						Date Time:					
Relinquished By:						Date Time:						Received By:						Date Time:					
Cooler Temp:						Thermo, Corr. Factor						On Log											

ORIGIN ID:CAOA (575) 887-6245
XENCO SATURDAY
PAC N MAIL
910 W PIERCE ST
CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 21SEP18
ACTWGT: 43.00 LB
CAD: 1018131061NET 40.40
DIMS: 19x15x16 IN
BILL RECIPIENT

TO HOLD FOR XENCO

FEDEX OFFICE PRINT & SHIP CENTER
FEDEX OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

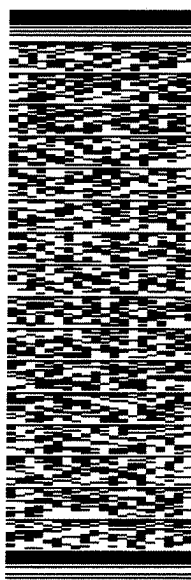
MIDLAND TX 79701

(806) 674-0639

REF: XENCO

PO:

DEPT:



552J11/F78C/DCA5

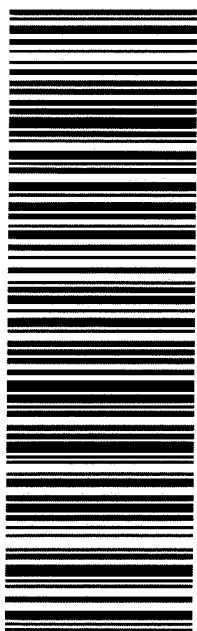
TRK# 7732 9746 2767
0201

SATURDAY HOLD
PRIORITY OVERNIGHT

HLD

41 MAFA

MAFKI
TX-US LBB



After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/22/2018 09:00:00 AM

Work Order #: 599988

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 09/24/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 09/24/2018



PHOTOGRAPHIC LOG



Photograph 1: View southeast of excavation.



Photograph 2: View northeast of excavation.