NAB1434452409
2RP-2650

XTO Energy, Inc.

Closure Request

Goldenchild 6 State

03/16/2020

LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

February 11, 2019

Mr. Bradford Billings
New Mexico Oil Conservation Division
1220 South St. Francis Drive, #3
Santa Fe, New Mexico 87505

RE: Closure Request
Palmillo State #1 Flow Line
Remediation Permit Number 2RP-2849
Eddy County, New Mexico

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing the excavation of impacted soil and soil sampling activities at the Palmillo State #1 flow line (Site) in Unit J, Section 1, Township 19 South, Range 28 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil after corrosion in an off-site flow line caused a release of 20 barrels (bbls) of crude oil and 7 bbls of produced water in the surrounding pasture. The release was discovered on February 23, 2015, and impacted approximately 925 square feet of pasture. The well was shut in and a temporary fence was placed around the release area. 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 March 3, 2015, and was assigned Remediation Permit (RP) Number 2RP-2849. (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.

The release is included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the NMOCD effective November 13, 2018. The purpose of the Compliance Agreement is to ensure that reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The release is categorized as a Tier II site in the Compliance Agreement, meaning remediation of the release began prior to August 14, 2018, the effective date of 19.15.29 NMAC, however remediation was incomplete, and a closure report had not yet been submitted. Based on the excavation activities and results of the confirmation soil sampling events, XTO is requesting no further action for this release.

BACKGROUND

According to Section 12 of 19.15.29 NMAC, LTE applied Table 1, *Closure Criteria for Soils Impacted by a Release*. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is C 00646, located approximately 1.3 miles southeast of the Site. Ground surface elevation at the water well location is approximately 3,385 feet, which is 6 feet lower in elevation than the Site. The water well has a depth to groundwater of 150 feet and a total depth of 199 feet. The closest continuously flowing water or significant watercourse to the Site is the Palmillo Draw, located approximately 100 feet southwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. Based on these criteria, the following NMOCD closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 100 mg/kg total petroleum hydrocarbons (TPH); and 600 mg/kg chloride. A closure criteria of 600 mg/kg chloride also applies to pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top 4 feet of areas that will be reclaimed following remediation.

SOIL SAMPLING

On February 27, 2018, an LTE scientist collected five preliminary soil samples (SS1 through SS5) within the release area to assess the lateral extent of soil impacts. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, the soil samples were collected from each sample location at approximately 1 foot bgs. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141s and field observations. The soil samples were screened for volatile aromatic hydrocarbons and chlorides using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

Laboratory analytical results indicated that soil samples SS1 and SS3 exceeded the NMOCD Table 1 closure criteria for TPH and soil sample SS1 exceeded the NMOCD Table 1 closure criteria for chloride. Laboratory analytical results indicated that soil samples SS2, SS4, and SS5 were compliant with the NMOCD Table 1 closure criteria for BTEX, TPH, and chloride. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2. Based on the soil sample laboratory results, excavation of impacted soil was required.

EXCAVATION

During January and February 2019, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by visual staining, field screening, and laboratory analytical results exceeding the NMOCD Table 1 closure criteria in preliminary soil samples SS1 and SS3. To delineate hydrocarbon and chloride impacts to soil and direct excavation activities, LTE screened soil samples using a PID and Hach® chloride QuanTab® test strips. Following removal of impacted soil, LTE collected soil samples from the sidewalls and floor of the excavation. The excavation soil samples were collected as 5-point composite samples to comply with 19.15.29 NMAC, dated August 14, 2018. Composite soil samples SW01 through SW12 were collected from the sidewalls of the excavation from depths of 2 feet to 12 feet bgs. Composite soil samples FS01 through FS07 were collected from the floor of the excavation from depths of 10 feet to 20 feet bgs. The 5-point composite sample were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. The soil sample locations are depicted on Figure 3.

Laboratory analytical results indicated that floor samples FS04 and FS05 initially exceeded the NMOCD Table 1 closure criteria for chloride. Additional soil was removed from the floor of the excavation and subsequent floor samples FS04A and FS05A were collected. Laboratory analytical results indicated that floor samples FS04A and FS05A were compliant with the NMOCD Table 1 closure criteria for BTEX, TPH, and chloride.

Laboratory analytical results indicated that sidewall sample SW01 initially exceeded the NMOCD Table 1 closure criteria for TPH. Additional soil was removed from the sidewall of the excavation and subsequent sidewall sample SW12 was collected. Laboratory analytical results indicated that sidewall sample SW12 was compliant with the NMOCD Table 1 closure criteria for BTEX, TPH, and chloride. Based on the final soil sample laboratory analytical results, no further excavation was required.

The excavation measured approximately 3,015 square feet in area. The horizontal extent of the excavation is illustrated on Figure 3. Approximately 1,652 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the Lea Land Disposal Facility in Carlsbad, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated that soil samples SS1, SS3, SW01, FS04, and FS05 initially exceeded the NMOCD Table 1 closure criteria for TPH and/or chloride. Impacted soil was excavated and laboratory analytical results indicated that the confirmation soil samples collected from the final excavation extents were compliant with the NMOCD Table 1 closure criteria for

BTEX, TPH, and chloride. Laboratory analytical results are presented on Figure 3 and summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

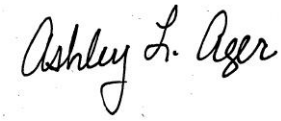
The impacted soil was excavated from the release area and laboratory analytical results for the confirmation soil samples collected from the final excavation extents indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. Upon approval of the no further action request, XTO will backfill the excavation with material purchased locally, recontour the Site to match pre-existing conditions, and reseed the disturbed area with Bureau of Land Management (BLM) seed mixture #2. XTO requests no further action for RP Number 2RP-2849. An updated NMOCD Form C-141 is included in Attachment 1. A photographic log of the Site is included in Attachment 3.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Adrian Baker
Project Geologist



Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Jim Amos, U.S. BLM
Deborah McKinney, BLM
Michael Bratcher, NMOCD

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Final Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-2849)
Attachment 2	Laboratory Analytical Reports
Attachment 3	Photographic Log

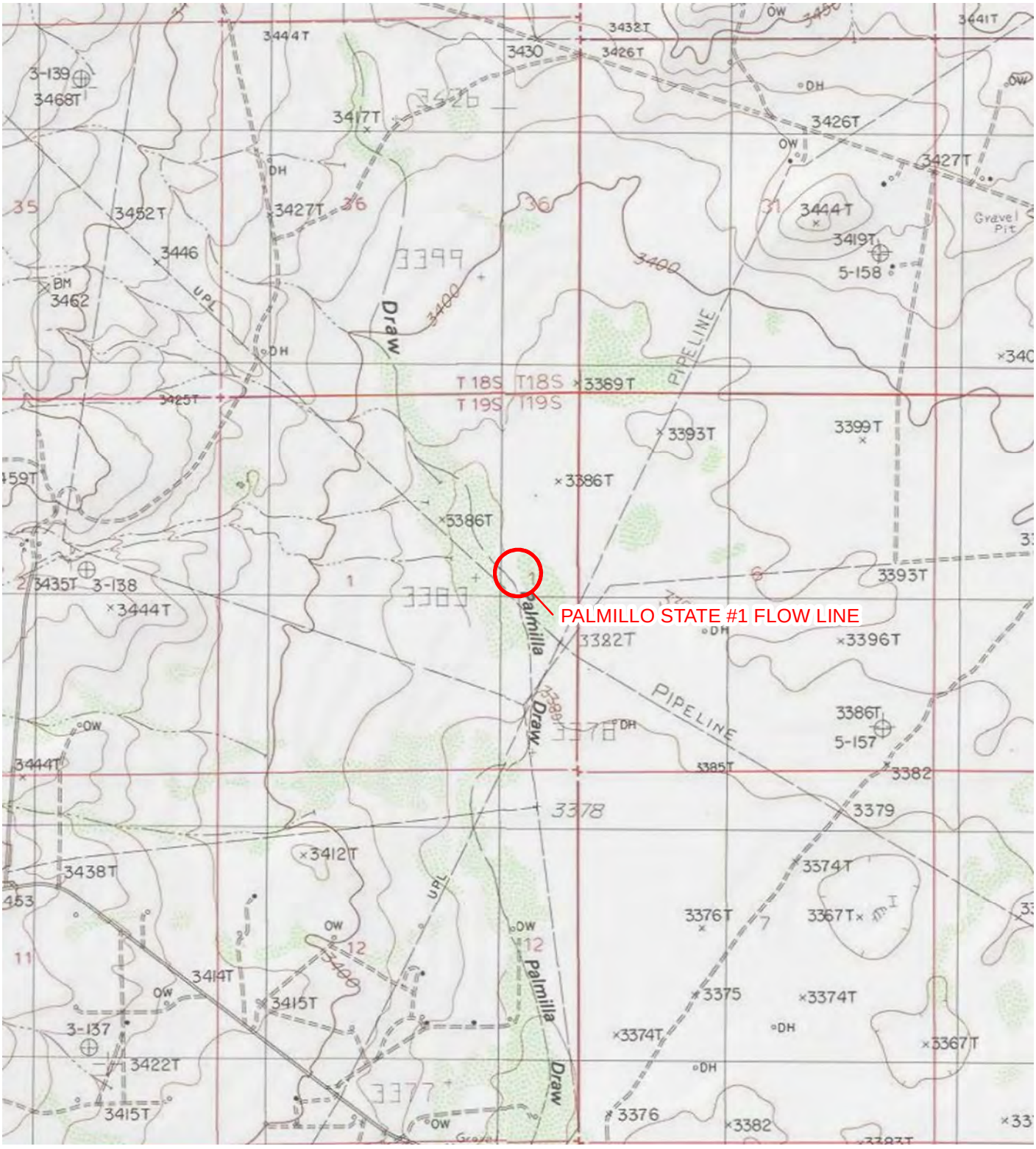


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-2849

FIGURE 1
SITE LOCATION MAP
PALMILLO STATE #1 FLOW LINE
UNIT J SEC 1 T19S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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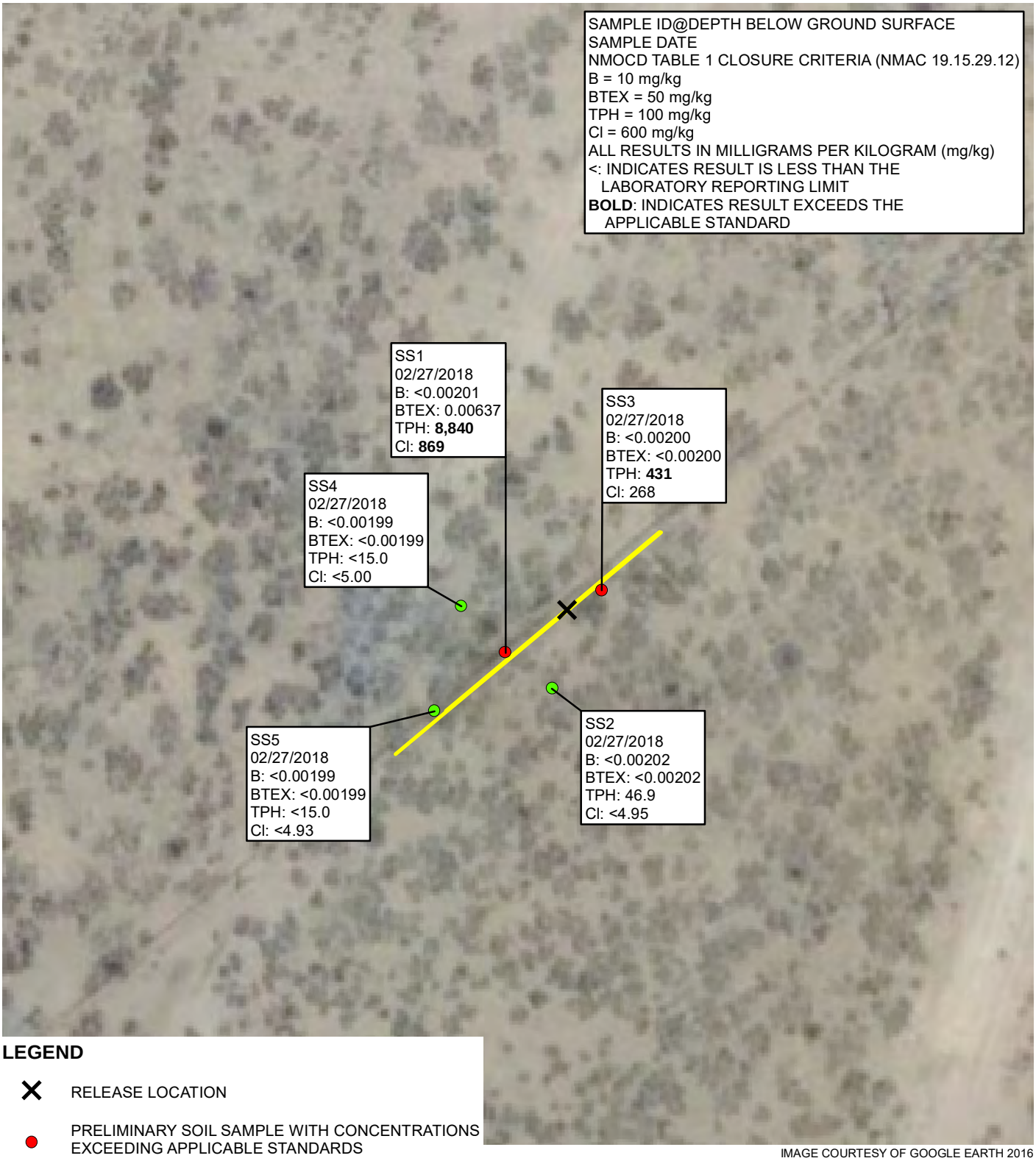


LEGEND

- RELEASE LOCATION
- PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- 3" FLOWLINE

IMAGE COURTESY OF GOOGLE EARTH 2016

0 60 120
Feet

N

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-2849

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
PALMILLO STATE #1 FLOW LINE
UNIT J SEC 1 T19S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918072_PALMILLO STATE #1\012918072_FIG02_INITIAL SS_2019.mxd

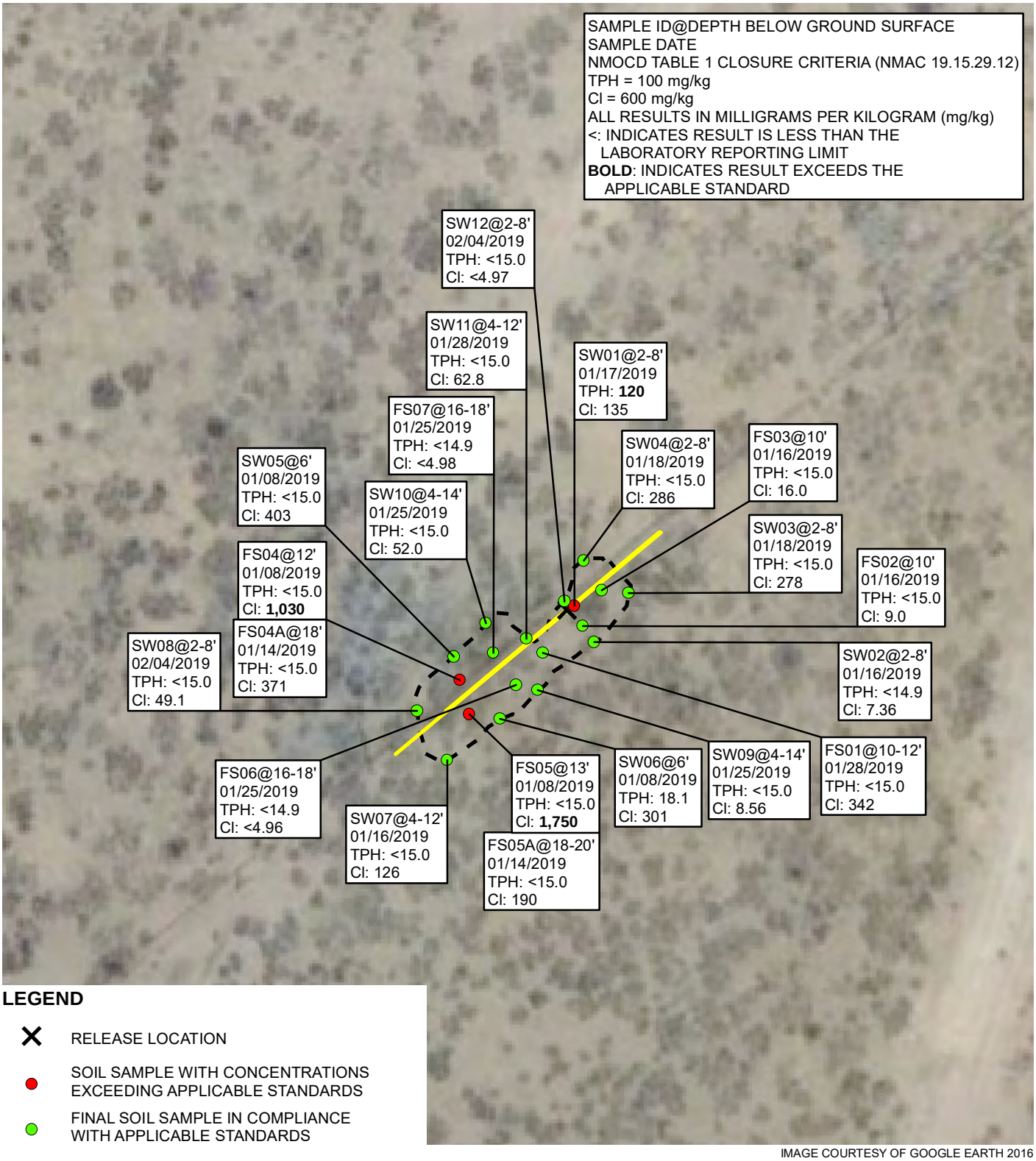


IMAGE COURTESY OF GOOGLE EARTH 2016

LEGEND

- RELEASE LOCATION
- SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- FINAL SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- 3" FLOWLINE
- EXCAVATION EXTENT

TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION

NOTE: ONLY CONCENTRATIONS FOR PARAMETERS THAT EXCEED APPLICABLE CLOSURE CRITERIA STANDARDS ARE PRESENTED.

NOTE: REMEDIATION PERMIT NUMBER 2RP-2849

0 60 120
Feet

N

FIGURE 3
FINAL SOIL SAMPLE LOCATIONS
PALMILLO STATE #1 FLOW LINE
UNIT J SEC 1 T19S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918072_PALMILLO STATE #1\012918072_FIG03_FINAL SS_2019.mxd

TABLE 1
SOIL ANALYTICAL RESULTS

PALMILLO STATE #1 FLOW LINE
REMEDIATION PERMIT NUMBER 2RP-2849
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	1	02/27/2018	<0.00201	<0.00201	0.00228	0.00409	0.00637	<74.9	8,400	440	8,400	**8,840**	**869**
SS2	1	02/27/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	46.9	<15.0	46.9	46.9	<4.95
SS3	1	02/27/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	352	79.2	352	**431**	268
SS4	1	02/27/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
SS5	1	02/27/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.93
FS04	12	01/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**1,030**
FS05	13	01/08/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	**1,750**
SW05	6	01/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	403
SW06	6	01/08/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	18.1	<15.0	<15.0	18.1	18.1	301
FS04A	18	01/14/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	371
FS05A	18 - 20	01/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	190
FS02	10	01/16/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	9.0
FS03	10	01/16/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	16.0
SW02	2 - 8	01/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	7.36
SW07	4 - 12	01/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	126
SW01	2 - 8	01/17/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	99.6	20.3	99.6	**120**	135
SW03	2 - 8	01/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	278
SW04	2 - 8	01/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	286
FS06	16 - 18	01/25/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	<4.96
FS07	16 - 18	01/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	<4.98
SW09	4 - 14	01/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	8.56
SW10	4 - 14	01/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	52.0
FS01	10 - 12	01/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	342
SW11	4 - 12	01/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	62.8
SW08	2 - 8	02/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.97
SW12	2 - 8	02/04/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	49.1
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600

Notes:
bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
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
* - indicates sample was collected in area to be reclaimed after remediation is complete; closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018
NMAC - New Mexico Administrative Code

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 03 2015
RECEIVED

Form C-14
Revised August 8, 201

Submit 1 Copy to appropriate District Office i
accordance with 19.15.29 NMAC

Release Notification and Corrective Action

nAB1502354133 2100137

OPERATOR

☒ Initial Report ☐ Final Repo

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: Palmillo State #1	Facility Type: Exploration and Production

Surface Owner: State of NM	Mineral Owner: State of NM	API No. 30-015-23164

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	1	19S	28E					Eddy

Latitude N 32.690332 **Longitude** W 104.124945

NATURE OF RELEASE

Type of Release: Crude oil and produced water	Volume of Release: 20 bbls of crude oil & 7 bbls produced water	Volume Recovered: None
Source of Release: 2 3/8" flow line	Date and Hour of Occurrence: Date and time unknown	Date and Hour of Discovery: 2/23/15 at approximately 1:30 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD	
By Whom? Amy Ruth	Date and Hour: 2/23/15 at about 2:00 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The flow leaked due to external corrosion, the well was shut in and a temporary fence was placed around the spill area. Due to high pressure gas lines, power lines, and remote location immediate response was not possible. A one-call was placed for response activities.

Describe Area Affected and Cleanup Action Taken.*
The spill impacted approximately 925 sq.ft of pasture area and pipeline right of way. The impact area is approximately 150 ft from the Palmillo Draw. Environmental Plus started site delineation on 3/2/15, samples were collected, and a hand digging crew started removing the saturated soil. The spill will be cleaned up in accordance to the NMCOD 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: Tony Savoie

Printed Name: Tony Savoie

Title: Waste Management and Remediation Specialist

E-mail Address: tasavoie@basspet.com

Date: 3/3/15 Phone: 432-556-8730

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: 3/4/15 Expiration Date: N/A

Conditions of Approval: Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 4/4/15

Attached ☐

* Attach Additional Sheets If Necessary

2RP-2849

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-2849
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-2849
Contact mailing address 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.690332 Longitude -104.124945
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Palmillo State #1	Site Type: Exploration and Production
Date Release Discovered: 2/13/2015	API# *(if applicable)* 30-015-23164

Unit Letter	Section	Township	Range	County
J	1	19S	28E	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) 20	Volume Recovered (bbls) 0
☒ Produced Water	Volume Released (bbls) 7	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The flow line leaked due to external corrosion, the well was shut in and a temporary fence was placed around the spill area. Due to high pressure gas lines, power lines, and remote location immediate response was not possible. The spill impacted approximately 925 square feet of pasture area and pipeline right of way. The impact area is approximately 150 ft from the Palmillo Draw.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2849
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Greater than 25 bbls of fluid released.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by Amy Ruth to NMOCD on 2/23/2015.	

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: February 11, 2019

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

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2849
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2849
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature: Date: February 11, 2019

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

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2849
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: February 11, 2019

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

OCD Only

Received by: Date:

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

Closure Approved by: Date:

Printed Name: Title:

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

Analytical Report 577912

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Palmillo State #1 / 2RP-2849

09-MAR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-16), 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 (T104704400-18-14)
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)
Xenco-Atlanta (LELAP Lab ID #04176)

09-MAR-18

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

Reference: XENCO Report No(s): **577912**
Palmillo State #1 / 2RP-2849
Project Address: 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) 577912. 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. 577912 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

Jessica Kramer
Project Assistant

Sample Cross Reference 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	02-27-18 08:15	12 In	577912-001
SS2	S	02-27-18 08:25	12 In	577912-002
SS3	S	02-27-18 08:30	12 In	577912-003
SS4	S	02-27-18 08:40	12 In	577912-004
SS5	S	02-27-18 08:50	12 In	577912-005

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3042981 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 577912-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 577912-001, -002, -003, -004, -005.
The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 577912

LT Environmental, Inc., Arvada, CO

Project Name: Palmillo State #1 / 2RP-2849

Project Id:
Contact: Adrian Baker
Project Location: NM

Date Received in Lab: Thu Mar-01-18 01:10 pm
Report Date: 09-MAR-18
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	577912-001		577912-002		577912-003		577912-004		577912-005	
	Field Id:	SS1		SS2		SS3		SS4		SS5	
	Depth:	12- In		12- In		12- In		12- In		12- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-27-18 08:15		Feb-27-18 08:25		Feb-27-18 08:30		Feb-27-18 08:40		Feb-27-18 08:50	
BTEX by EPA 8021B	***Extracted:***	Mar-06-18 15:00		Mar-06-18 15:00		Mar-06-18 15:00		Mar-06-18 15:00		Mar-06-18 15:00	
	Analyzed:	Mar-07-18 14:39		Mar-07-18 14:39		Mar-07-18 14:39		Mar-07-18 14:39		Mar-07-18 14:39	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199
Toluene		<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199
Ethylbenzene		0.00228	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199
m,p-Xylenes		<0.00402	0.00402	<0.00404	0.00404	<0.00401	0.00401	<0.00398	0.00398	<0.00398	0.00398
o-Xylene		0.00409	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199
Total Xylenes		0.00409	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199
Total BTEX		0.00637	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199
Inorganic Anions by EPA 300	***Extracted:***	Mar-07-18 13:00		Mar-07-18 13:00		Mar-07-18 13:00		Mar-07-18 13:00		Mar-07-18 13:00	
	Analyzed:	Mar-08-18 22:50		Mar-08-18 22:56		Mar-08-18 23:01		Mar-08-18 23:17		Mar-08-18 23:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		869	4.99	<4.95	4.95	268	4.97	<5.00	5.00	<4.93	4.93
TPH by SW8015 Mod	***Extracted:***	Mar-06-18 07:00		Mar-06-18 07:00		Mar-06-18 07:00		Mar-06-18 07:00		Mar-06-18 07:00	
	Analyzed:	Mar-06-18 19:26		Mar-06-18 19:52		Mar-06-18 20:19		Mar-06-18 20:45		Mar-06-18 21:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<74.9	74.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		8400	74.9	46.9	15.0	352	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		440	74.9	<15.0	15.0	79.2	15.0	<15.0	15.0	<15.0	15.0
Total TPH		8840	74.9	46.9	15.0	431	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS1**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-001	Date Collected:	02.27.18 08.15	Sample Depth:	12 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	03.07.18 13.00	Basis:	Wet Weight
Seq Number:	3043195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**869**	4.99	mg/kg	03.08.18 22.50		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.18 07.00	Basis:	Wet Weight
Seq Number:	3042992				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<74.9	74.9	mg/kg	03.06.18 19.26	U	5
Diesel Range Organics (DRO)	C10C28DRO	**8400**	74.9	mg/kg	03.06.18 19.26		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**440**	74.9	mg/kg	03.06.18 19.26		5
Total TPH	PHC635	**8840**	74.9	mg/kg	03.06.18 19.26		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	03.06.18 19.26	
o-Terphenyl	84-15-1	84	%	70-135	03.06.18 19.26	

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS1**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-001	Date Collected:	02.27.18 08.15	Sample Depth:	12 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.18 15.00	Basis:	Wet Weight
Seq Number:	3042981				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.07.18 14.39	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.07.18 14.39	U	1
Ethylbenzene	100-41-4	**0.00228**	0.00201	mg/kg	03.07.18 14.39		1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.07.18 14.39	U	1
o-Xylene	95-47-6	**0.00409**	0.00201	mg/kg	03.07.18 14.39		1
Total Xylenes	1330-20-7	**0.00409**	0.00201	mg/kg	03.07.18 14.39		1
Total BTEX		**0.00637**	0.00201	mg/kg	03.07.18 14.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	03.07.18 14.39	
1,4-Difluorobenzene	540-36-3	76	%	70-130	03.07.18 14.39	

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS2**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-002	Date Collected:	02.27.18 08.25	Sample Depth:	12 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	03.07.18 13.00	Basis:	Wet Weight
Seq Number:	3043195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	03.08.18 22.56	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.18 07.00	Basis:	Wet Weight
Seq Number:	3042992				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.06.18 19.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	**46.9**	15.0	mg/kg	03.06.18 19.52		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.06.18 19.52	U	1
Total TPH	PHC635	**46.9**	15.0	mg/kg	03.06.18 19.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	03.06.18 19.52	
o-Terphenyl	84-15-1	100	%	70-135	03.06.18 19.52	

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS2**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-002	Date Collected:	02.27.18 08.25	Sample Depth:	12 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.18 15.00	Basis:	Wet Weight
Seq Number:	3042981				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.07.18 14.39	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.07.18 14.39	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.07.18 14.39	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	03.07.18 14.39	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.07.18 14.39	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.07.18 14.39	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.07.18 14.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	03.07.18 14.39	
1,4-Difluorobenzene	540-36-3	78	%	70-130	03.07.18 14.39	

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS3**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-003	Date Collected:	02.27.18 08.30	Sample Depth:	12 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	03.07.18 13.00	Basis:	Wet Weight
Seq Number:	3043195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**268**	4.97	mg/kg	03.08.18 23.01		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.18 07.00	Basis:	Wet Weight
Seq Number:	3042992				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.06.18 20.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	**352**	15.0	mg/kg	03.06.18 20.19		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**79.2**	15.0	mg/kg	03.06.18 20.19		1
Total TPH	PHC635	**431**	15.0	mg/kg	03.06.18 20.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	03.06.18 20.19	
o-Terphenyl	84-15-1	101	%	70-135	03.06.18 20.19	

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS3**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-003	Date Collected:	02.27.18 08.30	Sample Depth:	12 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.18 15.00	Basis:	Wet Weight
Seq Number:	3042981				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.07.18 14.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.07.18 14.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.07.18 14.39	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.07.18 14.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.07.18 14.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.07.18 14.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.07.18 14.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	03.07.18 14.39	
1,4-Difluorobenzene	540-36-3	78	%	70-130	03.07.18 14.39	

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS4**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-004	Date Collected:	02.27.18 08.40	Sample Depth:	12 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	03.07.18 13.00	Basis:	Wet Weight
Seq Number:	3043195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.08.18 23.17	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.18 07.00	Basis:	Wet Weight
Seq Number:	3042992				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.06.18 20.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.06.18 20.45	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.06.18 20.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.18 20.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	03.06.18 20.45	
o-Terphenyl	84-15-1	93	%	70-135	03.06.18 20.45	

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS4**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-004	Date Collected:	02.27.18 08.40	Sample Depth:	12 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.18 15.00	Basis:	Wet Weight
Seq Number:	3042981				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.07.18 14.39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	03.07.18 14.39	
1,4-Difluorobenzene	540-36-3	76	%	70-130	03.07.18 14.39	

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS5**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-005	Date Collected:	02.27.18 08.50	Sample Depth:	12 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	03.07.18 13.00	Basis:	Wet Weight
Seq Number:	3043195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.93	4.93	mg/kg	03.08.18 23.22	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.18 07.00	Basis:	Wet Weight
Seq Number:	3042992				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.06.18 21.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.06.18 21.12	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.06.18 21.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.18 21.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	03.06.18 21.12	
o-Terphenyl	84-15-1	94	%	70-135	03.06.18 21.12	

Certificate of Analytical Results 577912

LT Environmental, Inc., Arvada, CO

Palmillo State #1 / 2RP-2849

Sample Id:	**SS5**	Matrix:	Soil	Date Received:	03.01.18 13.10
Lab Sample Id:	577912-005	Date Collected:	02.27.18 08.50	Sample Depth:	12 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.18 15.00	Basis:	Wet Weight
Seq Number:	3042981				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.07.18 14.39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.07.18 14.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	03.07.18 14.39	
1,4-Difluorobenzene	540-36-3	83	%	70-130	03.07.18 14.39	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 577912

LT Environmental, Inc.

Palmillo State #1 / 2RP-2849

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3043195 Matrix: Solid Date Prep: 03.07.18
MB Sample Id: 7640425-1-BLK LCS Sample Id: 7640425-1-BKS LCSD Sample Id: 7640425-1-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	275	110	275	110	90-110	0	20	mg/kg	03.08.18 21:52	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3043195 Matrix: Soil Date Prep: 03.07.18
Parent Sample Id: 577911-001 MS Sample Id: 577911-001 S MSD Sample Id: 577911-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	199	246	470	110	478	113	90-110	2	20	mg/kg	03.08.18 22:19	X

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3043195 Matrix: Soil Date Prep: 03.07.18
Parent Sample Id: 577913-001 MS Sample Id: 577913-001 S MSD Sample Id: 577913-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.90	245	263	107	260	106	90-110	1	20	mg/kg	03.08.18 23:33	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3042992 Matrix: Solid Date Prep: 03.06.18
MB Sample Id: 7640326-1-BLK LCS Sample Id: 7640326-1-BKS LCSD Sample Id: 7640326-1-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	1010	101	1060	106	70-135	5	35	mg/kg	03.06.18 10:21	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1090	109	70-135	4	35	mg/kg	03.06.18 10:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		114		117		70-135	%	03.06.18 10:21
o-Terphenyl	101		111		116		70-135	%	03.06.18 10:21

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 577912

LT Environmental, Inc.

Palmillo State #1 / 2RP-2849

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3042992 Matrix: Soil Date Prep: 03.06.18
Parent Sample Id: 577906-002 MS Sample Id: 577906-002 S MSD Sample Id: 577906-002 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	998	1040	104	1050	105	70-135	1	35	mg/kg	03.06.18 12:05	
Diesel Range Organics (DRO)	<15.0	998	1070	107	1060	106	70-135	1	35	mg/kg	03.06.18 12:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		116		70-135	%	03.06.18 12:05
o-Terphenyl	113		112		70-135	%	03.06.18 12:05

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3042981 Matrix: Solid Date Prep: 03.06.18
MB Sample Id: 7640285-1-BLK LCS Sample Id: 7640285-1-BKS LCSD Sample Id: 7640285-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0849	85	0.0857	85	70-130	1	35	mg/kg	03.07.18 14:39	
Toluene	<0.00201	0.100	0.0850	85	0.0856	85	70-130	1	35	mg/kg	03.07.18 14:39	
Ethylbenzene	<0.00201	0.100	0.0875	88	0.0886	88	70-130	1	35	mg/kg	03.07.18 14:39	
m,p-Xylenes	<0.00402	0.201	0.171	85	0.173	86	70-130	1	35	mg/kg	03.07.18 14:39	
o-Xylene	<0.00201	0.100	0.0866	87	0.0876	87	70-130	1	35	mg/kg	03.07.18 14:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	81		85		91		70-130	%	03.07.18 14:39
4-Bromofluorobenzene	108		109		113		70-130	%	03.07.18 14:39

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3042981 Matrix: Soil Date Prep: 03.06.18
Parent Sample Id: 577912-004 MS Sample Id: 577912-004 S MSD Sample Id: 577912-004 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	0.0612	61	0.0529	52	70-130	15	35	mg/kg	03.07.18 14:39	X
Toluene	<0.00202	0.101	0.0490	49	0.0402	40	70-130	20	35	mg/kg	03.07.18 14:39	X
Ethylbenzene	<0.00202	0.101	0.0494	49	0.0398	39	70-130	22	35	mg/kg	03.07.18 14:39	X
m,p-Xylenes	<0.00403	0.202	0.0917	45	0.0742	37	70-130	21	35	mg/kg	03.07.18 14:39	X
o-Xylene	<0.00202	0.101	0.0518	51	0.0429	42	70-130	19	35	mg/kg	03.07.18 14:39	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	71		99		70-130	%	03.07.18 14:39
4-Bromofluorobenzene	101		128		70-130	%	03.07.18 14:39

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

XENCO LABORATORIES

Setting the Standard since 1990

Page 1 Of 1

Revision 2016.1

Stafford, TX (281) 240-4200
Dallas, TX (214) 902-0300
El Paso, TX (915) 585-3443
Lubbock, TX (806) 794-1296
Midland, TX (432) 704-5440
San Antonio, TX (210) 509-3334
Phoenix, AZ (480) 355-0900
Service Center - Baton Rouge, LA (832) 712-8143
Service Center- Amarillo, TX (806)678-4514
Service Center- Hobbs, NM (575) 392-7550

www.xenco.com

Xenco Quote #

Xenco Job # 577912

Client / Reporting Information

Company Name / Branch: LTE / permian
Company Address: 3300 N. A Street Bldg 1 #103
Email: Abakera1tenv.com
Phone No:
Project Contact: Adnan Baker
Samplers's Name: AC

Project Information

Project Name/Number: Palmillo State 41 / 2RP-2849
Project Location: NM
Invoice To: XTO energy-Kyle Littrell
PO Number: 30-015-23164

Analytical Information

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX 8021	TPH 8015	Chloride 300.1	Field Comments
1	SS1	12	2/27	0815	S	1									X	X	X	
2	SS2			0825														
3	SS3			0830														
4	SS4			0840														
5	SS5			0850														
6																		
7																		
8																		
9																		
10																		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY
- [X] Standard

TAT Starts Day received by Lab, if received by 5:00 pm

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
- [ ] Level II Report with TRRP checklist

Notes:

Temp: 3.4 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 3.2

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler / Relinquished by / Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1	Adnan Baker	2/28/1500	1	2	2/26 750	2
3		3/1 1310	3	4		4
5			5	Custody Seal #	Preserved where applicable	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: 03/01/2018 01:10:00 PM

Work Order #: 577912

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**No**	TPH received in bulk jars
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 03/01/2018

Checklist reviewed by: Jessica Kramer Date: 03/01/2018

Jessica Kramer

Analytical Report 610712

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Pamillo State 1 Flowline

2RP-2849

15-JAN-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

15-JAN-19

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

Reference: XENCO Report No(s): **610712**
Pamillo State 1 Flowline
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 610712. 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. 610712 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

Jessica Kramer
Project Assistant

Sample Cross Reference 610712

LT Environmental, Inc., Arvada, CO

Pamillo State 1 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS04	S	01-08-19 11:30	12 ft	610712-001
SW05	S	01-08-19 12:45	6 ft	610712-002
FS05	S	01-08-19 13:20	13 ft	610712-003
SW06	S	01-08-19 13:30	6 ft	610712-004

Sample receipt non conformances and comments:

PER CLIENTS EMAIL REQUEST, CORRECT SAMPLE NAMES. NEW VERSION GENERATED.
JKR 01/15/19
SW08 TO SW05 AND SW09 TO SW06

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3075316 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3075388 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7669524-1-BLK.

Certificate of Analysis Summary 610712

LT Environmental, Inc., Arvada, CO

Project Name: Pamillo State 1 Flowline

Project Id: 2RP-2849
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Wed Jan-09-19 12:50 pm
Report Date: 15-JAN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	610712-001		610712-002		610712-003		610712-004					
	Field Id:	FS04		SW05		FS05		SW06					
	Depth:	12- ft		6- ft		13- ft		6- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jan-08-19 11:30		Jan-08-19 12:45		Jan-08-19 13:20		Jan-08-19 13:30					
BTEX by EPA 8021B	***Extracted:***	Jan-09-19 13:00		Jan-09-19 13:00		Jan-09-19 13:00		Jan-09-19 13:00					
	Analyzed:	Jan-09-19 21:30		Jan-09-19 21:49		Jan-09-19 22:08		Jan-09-19 22:27					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199				
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199				
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199				
m,p-Xylenes		<0.00399	0.00399	<0.00400	0.00400	<0.00403	0.00403	<0.00398	0.00398				
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199				
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199				
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199				
Inorganic Anions by EPA 300	***Extracted:***	Jan-09-19 15:00		Jan-09-19 15:00		Jan-10-19 08:00		Jan-10-19 08:00					
	Analyzed:	Jan-10-19 08:24		Jan-09-19 23:54		Jan-10-19 09:28		Jan-10-19 09:34					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		1030	5.00	403	5.00	1750	25.0	301	5.00				
TPH by SW8015 Mod	***Extracted:***	Jan-10-19 09:00		Jan-10-19 09:00		Jan-10-19 09:00		Jan-10-19 09:00					
	Analyzed:	Jan-10-19 11:10		Jan-10-19 12:10		Jan-10-19 12:30		Jan-10-19 12:50					
	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	18.1	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	18.1	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 610712

LT Environmental, Inc., Arvada, CO

Pamillo State 1 Flowline

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	01.09.19 12.50
Lab Sample Id:	610712-001	Date Collected:	01.08.19 11.30	Sample Depth:	12 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.09.19 15.00	Basis:	Wet Weight
Seq Number:	3075381				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1030**	5.00	mg/kg	01.10.19 08.24		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.10.19 09.00	Basis:	Wet Weight
Seq Number:	3075388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.10.19 11.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.10.19 11.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.10.19 11.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.10.19 11.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	01.10.19 11.10	
o-Terphenyl	84-15-1	82	%	70-135	01.10.19 11.10	

Certificate of Analytical Results 610712

LT Environmental, Inc., Arvada, CO

Pamillo State 1 Flowline

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	01.09.19 12.50
Lab Sample Id:	610712-001	Date Collected:	01.08.19 11.30	Sample Depth:	12 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.09.19 13.00	Basis:	Wet Weight
Seq Number:	3075316				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.19 21.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.19 21.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.19 21.30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.09.19 21.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.19 21.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.19 21.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.19 21.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	119	%	70-130	01.09.19 21.30	
4-Bromofluorobenzene	460-00-4	105	%	70-130	01.09.19 21.30	

Certificate of Analytical Results 610712

LT Environmental, Inc., Arvada, CO

Pamillo State 1 Flowline

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	01.09.19 12.50
Lab Sample Id:	610712-002	Date Collected:	01.08.19 12.45	Sample Depth:	6 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.09.19 15.00	Basis:	Wet Weight
Seq Number:	3075381				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**403**	5.00	mg/kg	01.09.19 23.54		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.10.19 09.00	Basis:	Wet Weight
Seq Number:	3075388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.10.19 12.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.10.19 12.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.10.19 12.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.10.19 12.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	01.10.19 12.10	
o-Terphenyl	84-15-1	90	%	70-135	01.10.19 12.10	

Certificate of Analytical Results 610712

LT Environmental, Inc., Arvada, CO

Pamillo State 1 Flowline

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	01.09.19 12.50
Lab Sample Id:	610712-002	Date Collected:	01.08.19 12.45	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.09.19 13.00	Basis:	Wet Weight
Seq Number:	3075316				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.19 21.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.19 21.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.19 21.49	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.09.19 21.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.19 21.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.19 21.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.19 21.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.09.19 21.49	
1,4-Difluorobenzene	540-36-3	117	%	70-130	01.09.19 21.49	

Certificate of Analytical Results 610712

LT Environmental, Inc., Arvada, CO

Pamillo State 1 Flowline

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	01.09.19 12.50
Lab Sample Id:	610712-003	Date Collected:	01.08.19 13.20	Sample Depth:	13 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.10.19 08.00	Basis:	Wet Weight
Seq Number:	3075334				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1750**	25.0	mg/kg	01.10.19 09.28		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.10.19 09.00	Basis:	Wet Weight
Seq Number:	3075388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.10.19 12.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.10.19 12.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.10.19 12.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.10.19 12.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	01.10.19 12.30	
o-Terphenyl	84-15-1	104	%	70-135	01.10.19 12.30	

Certificate of Analytical Results 610712

LT Environmental, Inc., Arvada, CO

Pamillo State 1 Flowline

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	01.09.19 12.50
Lab Sample Id:	610712-003	Date Collected:	01.08.19 13.20	Sample Depth:	13 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.09.19 13.00	Basis:	Wet Weight
Seq Number:	3075316				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.19 22.08	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.19 22.08	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.19 22.08	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.09.19 22.08	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.19 22.08	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.19 22.08	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.19 22.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.09.19 22.08	
1,4-Difluorobenzene	540-36-3	117	%	70-130	01.09.19 22.08	

Certificate of Analytical Results 610712

LT Environmental, Inc., Arvada, CO

Pamillo State 1 Flowline

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	01.09.19 12.50
Lab Sample Id:	610712-004	Date Collected:	01.08.19 13.30	Sample Depth:	6 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.10.19 08.00	Basis:	Wet Weight
Seq Number:	3075334				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**301**	5.00	mg/kg	01.10.19 09.34		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.10.19 09.00	Basis:	Wet Weight
Seq Number:	3075388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**18.1**	15.0	mg/kg	01.10.19 12.50		1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.10.19 12.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.10.19 12.50	U	1
Total TPH	PHC635	**18.1**	15.0	mg/kg	01.10.19 12.50		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	01.10.19 12.50	
o-Terphenyl	84-15-1	85	%	70-135	01.10.19 12.50	

Certificate of Analytical Results 610712

LT Environmental, Inc., Arvada, CO

Pamillo State 1 Flowline

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	01.09.19 12.50
Lab Sample Id:	610712-004	Date Collected:	01.08.19 13.30	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.09.19 13.00	Basis:	Wet Weight
Seq Number:	3075316				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.09.19 22.27	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.09.19 22.27	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.09.19 22.27	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.09.19 22.27	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.09.19 22.27	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.09.19 22.27	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.09.19 22.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.09.19 22.27	
1,4-Difluorobenzene	540-36-3	116	%	70-130	01.09.19 22.27	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 610712

LT Environmental, Inc.

Pamillo State 1 Flowline

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3075381 Matrix: Solid Date Prep: 01.09.19
MB Sample Id: 7669458-1-BLK LCS Sample Id: 7669458-1-BKS LCSD Sample Id: 7669458-1-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	232	93	232	93	90-110	0	20	mg/kg	01.09.19 21:09	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3075334 Matrix: Solid Date Prep: 01.10.19
MB Sample Id: 7669459-1-BLK LCS Sample Id: 7669459-1-BKS LCSD Sample Id: 7669459-1-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	243	97	244	98	90-110	0	20	mg/kg	01.10.19 08:57	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3075381 Matrix: Soil Date Prep: 01.09.19
Parent Sample Id: 610635-001 MS Sample Id: 610635-001 S MSD Sample Id: 610635-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	46.8	248	254	84	254	84	90-110	0	20	mg/kg	01.09.19 21:40	X

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3075381 Matrix: Soil Date Prep: 01.09.19
Parent Sample Id: 610712-002 MS Sample Id: 610712-002 S MSD Sample Id: 610712-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	403	250	635	93	634	92	90-110	0	20	mg/kg	01.10.19 00:05	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3075334 Matrix: Soil Date Prep: 01.10.19
Parent Sample Id: 610604-001 MS Sample Id: 610604-001 S MSD Sample Id: 610604-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.62	248	242	95	242	95	90-110	0	20	mg/kg	01.10.19 10:45	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 610712

LT Environmental, Inc.

Pamillo State 1 Flowline

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3075334 Matrix: Soil Date Prep: 01.10.19
Parent Sample Id: 610722-001 MS Sample Id: 610722-001 S MSD Sample Id: 610722-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.92	248	246	96	249	97	90-110	1	20	mg/kg	01.10.19 09:16	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3075388 Matrix: Solid Date Prep: 01.10.19
MB Sample Id: 7669524-1-BLK LCS Sample Id: 7669524-1-BKS LCSD Sample Id: 7669524-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	824	83	853	85	70-135	3	20	mg/kg	01.10.19 10:30	
Diesel Range Organics (DRO)	<8.11	998	917	92	945	95	70-135	3	20	mg/kg	01.10.19 10:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	134		112		115		70-135	%	01.10.19 10:30
o-Terphenyl	140	**	107		110		70-135	%	01.10.19 10:30

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3075388 Matrix: Soil Date Prep: 01.10.19
Parent Sample Id: 610712-001 MS Sample Id: 610712-001 S MSD Sample Id: 610712-001 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)	<7.98	997	1040	104	1080	108	70-135	4	20	mg/kg	01.10.19 11:30	
Diesel Range Organics (DRO)	<8.10	997	1180	118	1240	124	70-135	5	20	mg/kg	01.10.19 11:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		125		70-135	%	01.10.19 11:30
o-Terphenyl	106		109		70-135	%	01.10.19 11:30

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 610712

LT Environmental, Inc.

Pamillo State 1 Flowline

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3075316 Matrix: Solid Date Prep: 01.09.19

MB Sample Id: 7669474-1-BLK LCS Sample Id: 7669474-1-BKS LCSD Sample Id: 7669474-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.126	126	0.130	130	70-130	3	35	mg/kg	01.09.19 18:59	
Toluene	<0.000456	0.100	0.109	109	0.111	111	70-130	2	35	mg/kg	01.09.19 18:59	
Ethylbenzene	<0.000565	0.100	0.101	101	0.103	103	70-130	2	35	mg/kg	01.09.19 18:59	
m,p-Xylenes	<0.00101	0.200	0.199	100	0.203	102	70-130	2	35	mg/kg	01.09.19 18:59	
o-Xylene	<0.000344	0.100	0.0990	99	0.101	101	70-130	2	35	mg/kg	01.09.19 18:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		109		107		70-130	%	01.09.19 18:59
4-Bromofluorobenzene	90		94		93		70-130	%	01.09.19 18:59

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3075316 Matrix: Soil Date Prep: 01.09.19

Parent Sample Id: 610683-001 MS Sample Id: 610683-001 S MSD Sample Id: 610683-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.116	117	0.108	107	70-130	7	35	mg/kg	01.09.19 19:38	
Toluene	<0.000453	0.0994	0.0960	97	0.0880	87	70-130	9	35	mg/kg	01.09.19 19:38	
Ethylbenzene	<0.000561	0.0994	0.0828	83	0.0762	75	70-130	8	35	mg/kg	01.09.19 19:38	
m,p-Xylenes	<0.00101	0.199	0.163	82	0.150	74	70-130	8	35	mg/kg	01.09.19 19:38	
o-Xylene	<0.000342	0.0994	0.0811	82	0.0751	74	70-130	8	35	mg/kg	01.09.19 19:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		111		70-130	%	01.09.19 19:38
4-Bromofluorobenzene	93		96		70-130	%	01.09.19 19:38

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 619712

www.xenco.com Page _____ of _____

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	AbaKer@LTenv.com

Work Order Comments

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

Project Name:	Palmillo State 1 Flowline	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP-2849	Rush: 01/09/19	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.3 0.2	Thermometer ID	
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
FS04	S	01/08	1130	12'	1	X	X	X
SW08	S	01/08	1245	6'	1	X	X	X
FS05	S	01/08	1320	13'	1	X	X	X
SW09	S	01/08	1330	6'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

01/08/2019

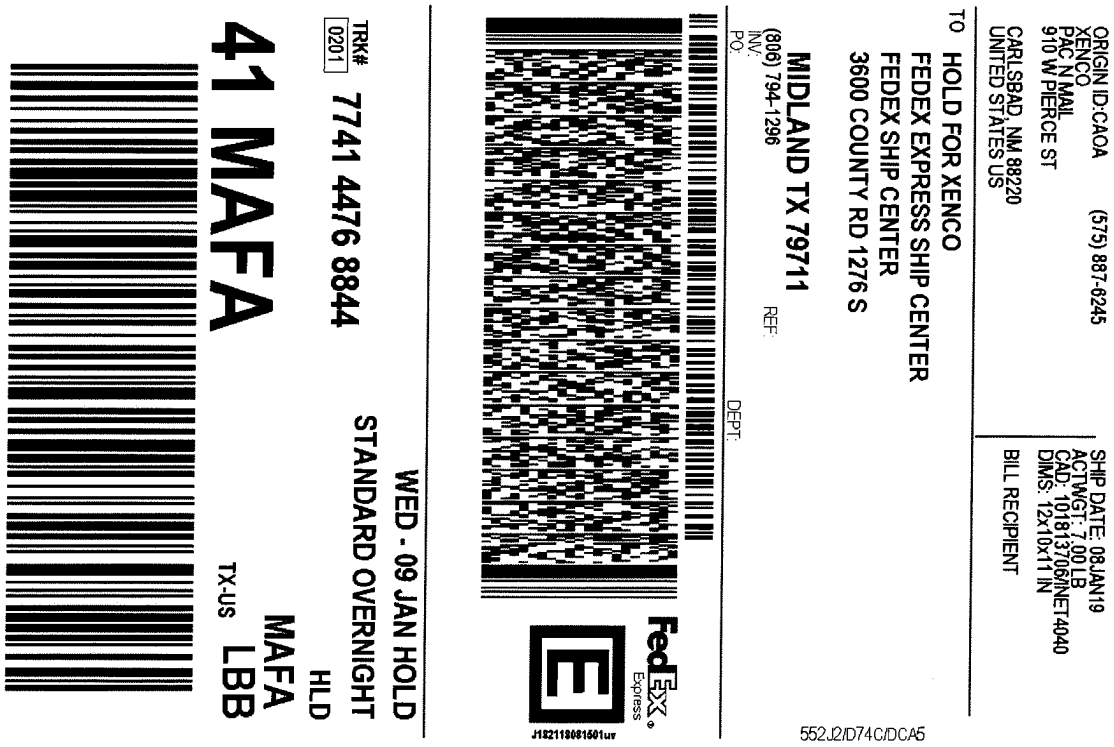
Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Garrett Green		01/08/19 - 1515	2		1/9/19 0850
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Final 1.001



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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our 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: 01/09/2019 12:50:00 PM

Work Order #: 610712

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 01/09/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 01/09/2019

Jessica Kramer

Analytical Report 611646

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Palmillo State 1 Flowline

01-FEB-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

01-FEB-19

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

Reference: XENCO Report No(s): **611646**
Palmillo State 1 Flowline
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 611646. 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. 611646 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

Jessica Kramer
Project Assistant

Sample Cross Reference 611646

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS04A	S	01-14-19 13:10	18 ft	611646-001
FS05A	S	01-14-19 13:30	18 - 20 ft	611646-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Palmillo State 1 Flowline

Project ID:
Work Order Number(s): *611646*

Report Date: *01-FEB-19*
Date Received: *01/17/2019*

Sample receipt non conformances and comments:

Per clients email corrected sample names FS04 TO FS04A AND FS05 TO FS05A JK 02/01/19

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3076200 BTEX by EPA 8021B

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

Batch: LBA-3076282 Inorganic Anions by EPA 300

Lab Sample ID 611646-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 611646-001, -002.

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

Certificate of Analysis Summary 611646

LT Environmental, Inc., Arvada, CO

Project Name: Palmillo State 1 Flowline

Project Id:
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Thu Jan-17-19 12:05 pm
Report Date: 01-FEB-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	611646-001		611646-002					
	Field Id:	FS04A		FS05A					
	Depth:	18- ft		18-20 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Jan-14-19 13:10		Jan-14-19 13:30					
BTEX by EPA 8021B	***Extracted:***	Jan-17-19 16:00		Jan-17-19 16:00					
	Analyzed:	Jan-18-19 03:05		Jan-18-19 03:24					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00202	0.00202	<0.00200	0.00200				
Toluene		<0.00202	0.00202	<0.00200	0.00200				
Ethylbenzene		<0.00202	0.00202	<0.00200	0.00200				
m,p-Xylenes		<0.00403	0.00403	<0.00400	0.00400				
o-Xylene		<0.00202	0.00202	<0.00200	0.00200				
Total Xylenes		<0.00202	0.00202	<0.00200	0.00200				
Total BTEX		<0.00202	0.00202	<0.00200	0.00200				
Inorganic Anions by EPA 300	***Extracted:***	Jan-17-19 16:00		Jan-17-19 16:00					
	Analyzed:	Jan-17-19 23:31		Jan-17-19 23:49					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		371	4.95	190	4.95				
TPH by SW8015 Mod	***Extracted:***	Jan-18-19 08:30		Jan-18-19 08:30					
	Analyzed:	Jan-18-19 13:43		Jan-18-19 14:04					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 611646

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS04A**	Matrix:	Soil	Date Received:	01.17.19 12.05
Lab Sample Id:	611646-001	Date Collected:	01.14.19 13.10	Sample Depth:	18 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.17.19 16.00	Basis:	Wet Weight
Seq Number:	3076282				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**371**	4.95	mg/kg	01.17.19 23.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.19 08.30	Basis:	Wet Weight
Seq Number:	3076301				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.18.19 13.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.18.19 13.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.18.19 13.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.18.19 13.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	01.18.19 13.43	
o-Terphenyl	84-15-1	112	%	70-135	01.18.19 13.43	

Certificate of Analytical Results 611646

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS04A**	Matrix:	Soil	Date Received:	01.17.19 12.05
Lab Sample Id:	611646-001	Date Collected:	01.14.19 13.10	Sample Depth:	18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.17.19 16.00	Basis:	Wet Weight
Seq Number:	3076200				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.18.19 03.05	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.18.19 03.05	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.18.19 03.05	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.18.19 03.05	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.18.19 03.05	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.18.19 03.05	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.18.19 03.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	70-130	01.18.19 03.05	
4-Bromofluorobenzene	460-00-4	115	%	70-130	01.18.19 03.05	

Certificate of Analytical Results 611646

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS05A**	Matrix:	Soil	Date Received:	01.17.19 12.05
Lab Sample Id:	611646-002	Date Collected:	01.14.19 13.30	Sample Depth:	18 - 20 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.17.19 16.00	Basis:	Wet Weight
Seq Number:	3076282				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**190**	4.95	mg/kg	01.17.19 23.49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.19 08.30	Basis:	Wet Weight
Seq Number:	3076301				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.18.19 14.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.18.19 14.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.18.19 14.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.18.19 14.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.18.19 14.04	
o-Terphenyl	84-15-1	100	%	70-135	01.18.19 14.04	

Certificate of Analytical Results 611646

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS05A**	Matrix:	Soil	Date Received:	01.17.19 12.05
Lab Sample Id:	611646-002	Date Collected:	01.14.19 13.30	Sample Depth:	18 - 20 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.17.19 16.00	Basis:	Wet Weight
Seq Number:	3076200				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.18.19 03.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.18.19 03.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.18.19 03.24	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.18.19 03.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.18.19 03.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.18.19 03.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.18.19 03.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	01.18.19 03.24	
1,4-Difluorobenzene	540-36-3	115	%	70-130	01.18.19 03.24	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 611646

LT Environmental, Inc.

Palmillo State 1 Flowline

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076282 Matrix: Solid Date Prep: 01.17.19
MB Sample Id: 7669955-1-BLK LCS Sample Id: 7669955-1-BKS LCSD Sample Id: 7669955-1-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	248	99	246	98	90-110	1	20	mg/kg	01.17.19 23:18	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076282 Matrix: Soil Date Prep: 01.17.19
Parent Sample Id: 611567-003 MS Sample Id: 611567-003 S MSD Sample Id: 611567-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	30.4	249	272	97	267	95	90-110	2	20	mg/kg	01.18.19 01:06	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076282 Matrix: Soil Date Prep: 01.17.19
Parent Sample Id: 611646-001 MS Sample Id: 611646-001 S MSD Sample Id: 611646-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	371	248	565	78	586	87	90-110	4	20	mg/kg	01.17.19 23:37	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3076301 Matrix: Solid Date Prep: 01.18.19
MB Sample Id: 7670031-1-BLK LCS Sample Id: 7670031-1-BKS LCSD Sample Id: 7670031-1-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	810	81	812	81	70-135	0	20	mg/kg	01.18.19 11:03	
Diesel Range Organics (DRO)	<8.13	1000	889	89	897	90	70-135	1	20	mg/kg	01.18.19 11:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		125		124		70-135	%	01.18.19 11:03
o-Terphenyl	89		121		120		70-135	%	01.18.19 11:03

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 611646

LT Environmental, Inc.

Palmillo State 1 Flowline

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3076301 Matrix: Soil Date Prep: 01.18.19
Parent Sample Id: 611644-001 MS Sample Id: 611644-001 S MSD Sample Id: 611644-001 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)	<8.00	1000	939	94	844	84	70-135	11	20	mg/kg	01.18.19 12:03	
Diesel Range Organics (DRO)	13.1	1000	1020	101	936	92	70-135	9	20	mg/kg	01.18.19 12:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		118		70-135	%	01.18.19 12:03
o-Terphenyl	126		109		70-135	%	01.18.19 12:03

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3076200 Matrix: Solid Date Prep: 01.17.19
MB Sample Id: 7669975-1-BLK LCS Sample Id: 7669975-1-BKS LCSD Sample Id: 7669975-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000387	0.101	0.126	125	0.124	124	70-130	2	35	mg/kg	01.17.19 23:57	
Toluene	<0.000458	0.101	0.109	108	0.107	107	70-130	2	35	mg/kg	01.17.19 23:57	
Ethylbenzene	<0.000568	0.101	0.100	99	0.0978	98	70-130	2	35	mg/kg	01.17.19 23:57	
m,p-Xylenes	<0.00102	0.201	0.200	100	0.194	97	70-130	3	35	mg/kg	01.17.19 23:57	
o-Xylene	<0.000346	0.101	0.0994	98	0.0968	97	70-130	3	35	mg/kg	01.17.19 23:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		108		109		70-130	%	01.17.19 23:57
4-Bromofluorobenzene	94		108		109		70-130	%	01.17.19 23:57

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3076200 Matrix: Soil Date Prep: 01.17.19
Parent Sample Id: 611644-001 MS Sample Id: 611644-001 S MSD Sample Id: 611644-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.0962	96	0.102	102	70-130	6	35	mg/kg	01.18.19 00:35	
Toluene	<0.000457	0.100	0.0842	84	0.0899	90	70-130	7	35	mg/kg	01.18.19 00:35	
Ethylbenzene	<0.000566	0.100	0.0756	76	0.0816	82	70-130	8	35	mg/kg	01.18.19 00:35	
m,p-Xylenes	<0.00102	0.200	0.152	76	0.164	82	70-130	8	35	mg/kg	01.18.19 00:35	
o-Xylene	<0.000345	0.100	0.0756	76	0.0821	82	70-130	8	35	mg/kg	01.18.19 00:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		109		70-130	%	01.18.19 00:35
4-Bromofluorobenzene	110		109		70-130	%	01.18.19 00:35

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

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

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

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

Chain of Custody

1 of 1

Work Order No: 611646

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	Abaker@LTenv.com/Ggreen@LTenv.com

Work Order Comments

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

Project Name:	Palmillo State 1 Flowline	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP 2849	Rush: 01/15/19	
Sampler's Name:	Garrett Green	Due Date: 01/17/19	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.3/0.2	Thermometer ID	
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
FS04	S	01/14/19	1310	18'	1	X	X	X
FS05	S	01/14/19	1330	18'-20'	1	X	X	X

Work Order Notes

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

Sample Comments

Scott Sanders 01/15/2019

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Scott Sanders	Taylor Kray	01/15 - 1515	2 Taylor Kray	Brad	1/17/19 1205
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Final 1.001

Page 13 of 15

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

SHIP DATE: 16JAN19
ACTWGT: 46.00 LB
CAD: 101813706/INET4040
DIMS: 25x15x14 IN
BILL RECIPIENT

TO HOLD FOR XENCO
FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S
MIDLAND TX 79711
(806) 794-1296
INV:
PO:
REF:
DEPT:

552J2/D74C/DCA5

J182118081601ur

THU - 17 JAN HOLD
STANDARD OVERNIGHT
HLD
MAFA
TX-US LBB

TRK# 0201 7742 1331 2281

41 MAFA

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: 01/17/2019 12:05:00 PM

Work Order #: 611646

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 01/17/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 01/18/2019

Jessica Kramer

Analytical Report 612048

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Palmillo State 1 Flowline

23-JAN-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

23-JAN-19

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

Reference: XENCO Report No(s): **612048**
Palmillo State 1 Flowline
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 612048. 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. 612048 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

Jessica Kramer
Project Assistant

Sample Cross Reference 612048

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW07	S	01-16-19 10:00	4 - 12 ft	612048-001
FS03	S	01-16-19 13:50	10 ft	612048-002
FS02	S	01-16-19 14:20	10 ft	612048-003
SW02	S	01-16-19 15:00	2 - 8 ft	612048-004
SW01	S	01-17-19 13:00	2 - 8 ft	612048-005
SW03	S	01-18-19 09:30	2 - 8 ft	612048-006
SW04	S	01-18-19 10:30	2 - 8 ft	612048-007

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3076634 BTEX by EPA 8021B

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

Certificate of Analysis Summary 612048

LT Environmental, Inc., Arvada, CO

Project Name: Palmillo State 1 Flowline

Project Id:

Contact: Adrian Baker

Project Location: Delaware Basin

Date Received in Lab: Tue Jan-22-19 12:47 pm

Report Date: 23-JAN-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	612048-001		612048-002		612048-003		612048-004		612048-005		612048-006	
	Field Id:	SW07		FS03		FS02		SW02		SW01		SW03	
	Depth:	4-12 ft		10- ft		10- ft		2-8 ft		2-8 ft		2-8 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-16-19 10:00		Jan-16-19 13:50		Jan-16-19 14:20		Jan-16-19 15:00		Jan-17-19 13:00		Jan-18-19 09:30	
BTEX by EPA 8021B	***Extracted:***	Jan-22-19 14:30		Jan-22-19 14:30		Jan-22-19 14:30		Jan-22-19 14:30		Jan-22-19 14:30		Jan-22-19 14:30	
	Analyzed:	Jan-23-19 00:14		Jan-23-19 00:33		Jan-23-19 00:52		Jan-23-19 01:11		Jan-23-19 01:30		Jan-23-19 01:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Toluene		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
m,p-Xylenes		<0.00400	0.00400	<0.00402	0.00402	<0.00398	0.00398	<0.00399	0.00399	<0.00402	0.00402	<0.00398	0.00398
o-Xylene		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Total BTEX		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Inorganic Anions by EPA 300	***Extracted:***	Jan-22-19 14:00		Jan-22-19 14:00		Jan-22-19 14:00		Jan-22-19 14:00		Jan-22-19 14:00		Jan-22-19 14:00	
	Analyzed:	Jan-22-19 18:20		Jan-22-19 18:41		Jan-22-19 18:47		Jan-22-19 18:54		Jan-22-19 19:00		Jan-22-19 19:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		126	4.95	16.0	4.96	9.00	4.96	7.36	4.96	135	4.99	278	4.97
TPH by SW8015 Mod	***Extracted:***	Jan-22-19 15:00		Jan-22-19 15:00		Jan-22-19 15:00		Jan-22-19 15:00		Jan-22-19 15:00		Jan-22-19 15:00	
	Analyzed:	Jan-22-19 21:37		Jan-22-19 22:37		Jan-22-19 22:57		Jan-22-19 23:17		Jan-22-19 23:37		Jan-22-19 23:57	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	99.6	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	20.3	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	120	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 612048

LT Environmental, Inc., Arvada, CO

Project Name: Palmillo State 1 Flowline

Project Id:
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Jan-22-19 12:47 pm
Report Date: 23-JAN-19
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	612048-007					
	Field Id:	SW04					
	Depth:	2-8 ft					
	Matrix:	SOIL					
	Sampled:	Jan-18-19 10:30					
BTEX by EPA 8021B	***Extracted:***	Jan-22-19 14:30					
	Analyzed:	Jan-23-19 02:08					
	Units/RL:	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		<0.00400 0.00400					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
Inorganic Anions by EPA 300	***Extracted:***	Jan-22-19 14:00					
	Analyzed:	Jan-22-19 19:12					
	Units/RL:	mg/kg RL					
Chloride		286 5.00					
TPH by SW8015 Mod	***Extracted:***	Jan-22-19 15:00					
	Analyzed:	Jan-23-19 00:17					
	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					

Jessica Kramer
Project Assistant

Certificate of Analytical Results 612048

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-001	Date Collected:	01.16.19 10.00	Sample Depth:	4 - 12 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 14.00	Basis:	Wet Weight
Seq Number:	3076678				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**126**	4.95	mg/kg	01.22.19 18.20		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.22.19 15.00	Basis:	Wet Weight
Seq Number:	3076651				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 21.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.22.19 21.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 21.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.22.19 21.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	01.22.19 21.37	
o-Terphenyl	84-15-1	91	%	70-135	01.22.19 21.37	

Certificate of Analytical Results 612048

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-001	Date Collected:	01.16.19 10.00	Sample Depth:	4 - 12 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.22.19 14.30	Basis:	Wet Weight
Seq Number:	3076634				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.23.19 00.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.23.19 00.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.23.19 00.14	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.23.19 00.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.23.19 00.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.23.19 00.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.23.19 00.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	70-130	01.23.19 00.14	
4-Bromofluorobenzene	460-00-4	106	%	70-130	01.23.19 00.14	

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LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-002	Date Collected:	01.16.19 13.50	Sample Depth:	10 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 14.00	Basis:	Wet Weight
Seq Number:	3076678				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16.0**	4.96	mg/kg	01.22.19 18.41		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.22.19 15.00	Basis:	Wet Weight
Seq Number:	3076651				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 22.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.22.19 22.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 22.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.22.19 22.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.22.19 22.37	
o-Terphenyl	84-15-1	94	%	70-135	01.22.19 22.37	

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LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-002	Date Collected:	01.16.19 13.50	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.22.19 14.30	Basis:	Wet Weight
Seq Number:	3076634				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.23.19 00.33	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.23.19 00.33	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.23.19 00.33	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.23.19 00.33	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.23.19 00.33	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.23.19 00.33	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.23.19 00.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	01.23.19 00.33	
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.23.19 00.33	

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LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-003	Date Collected:	01.16.19 14.20	Sample Depth:	10 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 14.00	Basis:	Wet Weight
Seq Number:	3076678				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9.00**	4.96	mg/kg	01.22.19 18.47		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.22.19 15.00	Basis:	Wet Weight
Seq Number:	3076651				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 22.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.22.19 22.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 22.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.22.19 22.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.22.19 22.57	
o-Terphenyl	84-15-1	94	%	70-135	01.22.19 22.57	

Certificate of Analytical Results 612048

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-003	Date Collected:	01.16.19 14.20	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.22.19 14.30	Basis:	Wet Weight
Seq Number:	3076634				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.23.19 00.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.23.19 00.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.23.19 00.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.23.19 00.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.23.19 00.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.23.19 00.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.23.19 00.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.23.19 00.52	
4-Bromofluorobenzene	460-00-4	111	%	70-130	01.23.19 00.52	

Certificate of Analytical Results 612048

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-004	Date Collected:	01.16.19 15.00	Sample Depth:	2 - 8 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 14.00	Basis:	Wet Weight
Seq Number:	3076678				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.36**	4.96	mg/kg	01.22.19 18.54		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.22.19 15.00	Basis:	Wet Weight
Seq Number:	3076651				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	01.22.19 23.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	01.22.19 23.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	01.22.19 23.17	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	01.22.19 23.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.22.19 23.17	
o-Terphenyl	84-15-1	93	%	70-135	01.22.19 23.17	

Certificate of Analytical Results 612048

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-004	Date Collected:	01.16.19 15.00	Sample Depth:	2 - 8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.22.19 14.30	Basis:	Wet Weight
Seq Number:	3076634				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.23.19 01.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.23.19 01.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.23.19 01.11	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.23.19 01.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.23.19 01.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.23.19 01.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.23.19 01.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.23.19 01.11	
4-Bromofluorobenzene	460-00-4	114	%	70-130	01.23.19 01.11	

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LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-005	Date Collected:	01.17.19 13.00	Sample Depth:	2 - 8 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 14.00	Basis:	Wet Weight
Seq Number:	3076678				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**135**	4.99	mg/kg	01.22.19 19.00		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.22.19 15.00	Basis:	Wet Weight
Seq Number:	3076651				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 23.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	**99.6**	15.0	mg/kg	01.22.19 23.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**20.3**	15.0	mg/kg	01.22.19 23.37		1
Total TPH	PHC635	**120**	15.0	mg/kg	01.22.19 23.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	01.22.19 23.37	
o-Terphenyl	84-15-1	87	%	70-135	01.22.19 23.37	

Certificate of Analytical Results 612048

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-005	Date Collected:	01.17.19 13.00	Sample Depth:	2 - 8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.22.19 14.30	Basis:	Wet Weight
Seq Number:	3076634				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.23.19 01.30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.23.19 01.30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.23.19 01.30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.23.19 01.30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.23.19 01.30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.23.19 01.30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.23.19 01.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	01.23.19 01.30	
4-Bromofluorobenzene	460-00-4	116	%	70-130	01.23.19 01.30	

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LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-006	Date Collected:	01.18.19 09.30	Sample Depth:	2 - 8 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 14.00	Basis:	Wet Weight
Seq Number:	3076678				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**278**	4.97	mg/kg	01.22.19 19.06		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.22.19 15.00	Basis:	Wet Weight
Seq Number:	3076651				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 23.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.22.19 23.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 23.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.22.19 23.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.22.19 23.57	
o-Terphenyl	84-15-1	91	%	70-135	01.22.19 23.57	

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LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-006	Date Collected:	01.18.19 09.30	Sample Depth:	2 - 8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.22.19 14.30	Basis:	Wet Weight
Seq Number:	3076634				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.23.19 01.49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.23.19 01.49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.23.19 01.49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.23.19 01.49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.23.19 01.49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.23.19 01.49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.23.19 01.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	01.23.19 01.49	
1,4-Difluorobenzene	540-36-3	110	%	70-130	01.23.19 01.49	

Certificate of Analytical Results 612048

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-007	Date Collected:	01.18.19 10.30	Sample Depth:	2 - 8 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 14.00	Basis:	Wet Weight
Seq Number:	3076678				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**286**	5.00	mg/kg	01.22.19 19.12		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.22.19 15.00	Basis:	Wet Weight
Seq Number:	3076651				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.23.19 00.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.23.19 00.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.23.19 00.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.23.19 00.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.23.19 00.17	
o-Terphenyl	84-15-1	92	%	70-135	01.23.19 00.17	

Certificate of Analytical Results 612048

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	01.22.19 12.47
Lab Sample Id:	612048-007	Date Collected:	01.18.19 10.30	Sample Depth:	2 - 8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.22.19 14.30	Basis:	Wet Weight
Seq Number:	3076634				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.23.19 02.08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.23.19 02.08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.23.19 02.08	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.23.19 02.08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.23.19 02.08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.23.19 02.08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.23.19 02.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	01.23.19 02.08	
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.23.19 02.08	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 612048

LT Environmental, Inc.

Palmillo State 1 Flowline

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076678 Matrix: Solid Date Prep: 01.22.19
MB Sample Id: 7670211-1-BLK LCS Sample Id: 7670211-1-BKS LCSD Sample Id: 7670211-1-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	233	93	226	90	90-110	3	20	mg/kg	01.22.19 16:13	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076678 Matrix: Soil Date Prep: 01.22.19
Parent Sample Id: 611911-003 MS Sample Id: 611911-003 S MSD Sample Id: 611911-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.7	250	243	91	261	98	90-110	7	20	mg/kg	01.22.19 16:32	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076678 Matrix: Soil Date Prep: 01.22.19
Parent Sample Id: 611911-007 MS Sample Id: 611911-007 S MSD Sample Id: 611911-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.72	250	242	96	246	98	90-110	2	20	mg/kg	01.22.19 18:01	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3076651 Matrix: Solid Date Prep: 01.22.19
MB Sample Id: 7670272-1-BLK LCS Sample Id: 7670272-1-BKS LCSD Sample Id: 7670272-1-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	899	90	924	92	70-135	3	20	mg/kg	01.22.19 20:57	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1030	103	70-135	2	20	mg/kg	01.22.19 20:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		114		116		70-135	%	01.22.19 20:57
o-Terphenyl	100		108		105		70-135	%	01.22.19 20:57

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 612048

LT Environmental, Inc.

Palmillo State 1 Flowline

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3076651 Matrix: Soil Date Prep: 01.22.19
Parent Sample Id: 612048-001 MS Sample Id: 612048-001 S MSD Sample Id: 612048-001 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	955	96	961	96	70-135	1	20	mg/kg	01.22.19 21:57	
Diesel Range Organics (DRO)	<8.12	999	1100	110	1110	111	70-135	1	20	mg/kg	01.22.19 21:57	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		128		70-135	%	01.22.19 21:57
o-Terphenyl	120		124		70-135	%	01.22.19 21:57

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3076634 Matrix: Solid Date Prep: 01.22.19
MB Sample Id: 7670219-1-BLK LCS Sample Id: 7670219-1-BKS LCSD Sample Id: 7670219-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.113	113	0.109	109	70-130	4	35	mg/kg	01.22.19 22:22	
Toluene	<0.000454	0.0996	0.101	101	0.0977	98	70-130	3	35	mg/kg	01.22.19 22:22	
Ethylbenzene	<0.000563	0.0996	0.0961	96	0.0923	92	70-130	4	35	mg/kg	01.22.19 22:22	
m,p-Xylenes	<0.00101	0.199	0.189	95	0.181	91	70-130	4	35	mg/kg	01.22.19 22:22	
o-Xylene	<0.000343	0.0996	0.0949	95	0.0912	91	70-130	4	35	mg/kg	01.22.19 22:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		104		105		70-130	%	01.22.19 22:22
4-Bromofluorobenzene	95		103		105		70-130	%	01.22.19 22:22

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3076634 Matrix: Soil Date Prep: 01.22.19
Parent Sample Id: 611651-001 MS Sample Id: 611651-001 S MSD Sample Id: 611651-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.0751	75	0.102	102	70-130	30	35	mg/kg	01.22.19 23:00	
Toluene	<0.000457	0.100	0.0821	82	0.0895	90	70-130	9	35	mg/kg	01.22.19 23:00	
Ethylbenzene	<0.000567	0.100	0.0775	78	0.0816	82	70-130	5	35	mg/kg	01.22.19 23:00	
m,p-Xylenes	<0.00102	0.201	0.159	79	0.159	80	70-130	0	35	mg/kg	01.22.19 23:00	
o-Xylene	0.000403	0.100	0.0795	79	0.0796	79	70-130	0	35	mg/kg	01.22.19 23:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		105		70-130	%	01.22.19 23:00
4-Bromofluorobenzene	112		105		70-130	%	01.22.19 23:00

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 612048

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	Abaker@LTenv.com/Ggreen@LTenv.com

Work Order Comments

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

Project Name:	Palmillo State 1 Flowline	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP-2849	Rush: 1/21/19	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.3 / 0.2	Thermometer ID	IR8	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SW07	S	01/16/19	1000	4'-12'	1	X	X	X
FS03	S	01/16/19	1350	10'	1	X	X	X
FS02	S	01/16/19	1420	~~8'~~ 10'	1	X	X	X
SW02	S	01/16/19	1500	2'-8'	1	X	X	X
SW01	S	01/17/19	1300	2'-8'	1	X	X	X
SW03	S	01/18/19	0930	2'-8'	1	X	X	X
SW04	S	01/18/19	1030	2'-8'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

01/18/2019

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		Timothy P. Elliott	01/18/19 1520			
2						1/22/19 1207
3						
4						
5						
6						

Revised Date 051418 Rev. 2018.1

Final 1.000

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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.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our 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: 01/22/2019 12:47:00 PM

Work Order #: 612048

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 01/22/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 01/23/2019
Jessica Kramer

Analytical Report 612809

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Palmillo State Flowline 1

31-JAN-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

31-JAN-19

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

Reference: XENCO Report No(s): **612809**
Palmillo State Flowline 1
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 612809. 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. 612809 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,

Julian Martinez
Midland Laboratory Director

Sample Cross Reference 612809

LT Environmental, Inc., Arvada, CO

Palmillo State Flowline 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS06	S	01-25-19 13:30	16 - 18 ft	612809-001
SW09	S	01-25-19 13:50	4 - 14 ft	612809-002
FS07	S	01-25-19 14:10	16 - 18 ft	612809-003
SW10	S	01-25-19 14:30	4 - 14 ft	612809-004

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3077498 BTEX by EPA 8021B

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

Certificate of Analysis Summary 612809

LT Environmental, Inc., Arvada, CO

Project Name: Palmillo State Flowline 1

Project Id:
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Jan-29-19 01:15 pm
Report Date: 31-JAN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	612809-001		612809-002		612809-003		612809-004					
	Field Id:	FS06		SW09		FS07		SW10					
	Depth:	16-18 ft		4-14 ft		16-18 ft		4-14 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jan-25-19 13:30		Jan-25-19 13:50		Jan-25-19 14:10		Jan-25-19 14:30					
BTEX by EPA 8021B	***Extracted:***	Jan-29-19 15:00		Jan-29-19 15:00		Jan-29-19 15:00		Jan-29-19 15:00					
	Analyzed:	Jan-30-19 02:14		Jan-30-19 02:33		Jan-30-19 02:52		Jan-30-19 03:11					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Toluene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Ethylbenzene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200				
m,p-Xylenes		<0.00398	0.00398	<0.00402	0.00402	<0.00402	0.00402	<0.00400	0.00400				
o-Xylene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Total Xylenes		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Total BTEX		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Inorganic Anions by EPA 300	***Extracted:***	Jan-30-19 11:00		Jan-30-19 11:00		Jan-30-19 11:00		Jan-30-19 11:00					
	Analyzed:	Jan-30-19 22:58		Jan-30-19 23:04		Jan-30-19 23:10		Jan-30-19 23:32					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		<4.96	4.96	8.56	4.97	<4.98	4.98	52.0	4.95				
TPH by SW8015 Mod	***Extracted:***	Jan-29-19 16:00		Jan-29-19 16:00		Jan-29-19 16:00		Jan-29-19 16:00					
	Analyzed:	Jan-30-19 00:07		Jan-30-19 00:27		Jan-30-19 00:47		Jan-30-19 01:07					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<14.9	14.9	<15.0	15.0				
Diesel Range Organics (DRO)		<14.9	14.9	<15.0	15.0	<14.9	14.9	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	<15.0	15.0	<14.9	14.9	<15.0	15.0				
Total TPH		<14.9	14.9	<15.0	15.0	<14.9	14.9	<15.0	15.0				

Julian Martinez
Midland Laboratory Director

Certificate of Analytical Results 612809

LT Environmental, Inc., Arvada, CO

Palmillo State Flowline 1

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612809-001	Date Collected:	01.25.19 13.30	Sample Depth:	16 - 18 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.30.19 11.00	Basis:	Wet Weight
Seq Number:	3077576				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	01.30.19 22.58	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.29.19 16.00	Basis:	Wet Weight
Seq Number:	3077483				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	01.30.19 00.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	01.30.19 00.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	01.30.19 00.07	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	01.30.19 00.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.30.19 00.07	
o-Terphenyl	84-15-1	94	%	70-135	01.30.19 00.07	

Certificate of Analytical Results 612809

LT Environmental, Inc., Arvada, CO

Palmillo State Flowline 1

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612809-001	Date Collected:	01.25.19 13.30	Sample Depth:	16 - 18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.29.19 15.00	Basis:	Wet Weight
Seq Number:	3077498				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.30.19 02.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.30.19 02.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.30.19 02.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.30.19 02.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.30.19 02.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.30.19 02.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.30.19 02.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	01.30.19 02.14	
4-Bromofluorobenzene	460-00-4	111	%	70-130	01.30.19 02.14	

Certificate of Analytical Results 612809

LT Environmental, Inc., Arvada, CO

Palmillo State Flowline 1

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612809-002	Date Collected:	01.25.19 13.50	Sample Depth:	4 - 14 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.30.19 11.00	Basis:	Wet Weight
Seq Number:	3077576				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.56**	4.97	mg/kg	01.30.19 23.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.29.19 16.00	Basis:	Wet Weight
Seq Number:	3077483				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.19 00.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.19 00.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.30.19 00.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.19 00.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	01.30.19 00.27	
o-Terphenyl	84-15-1	100	%	70-135	01.30.19 00.27	

Certificate of Analytical Results 612809

LT Environmental, Inc., Arvada, CO

Palmillo State Flowline 1

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612809-002	Date Collected:	01.25.19 13.50	Sample Depth:	4 - 14 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.29.19 15.00	Basis:	Wet Weight
Seq Number:	3077498				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.30.19 02.33	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.30.19 02.33	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.30.19 02.33	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.30.19 02.33	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.30.19 02.33	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.30.19 02.33	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.30.19 02.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	01.30.19 02.33	
1,4-Difluorobenzene	540-36-3	107	%	70-130	01.30.19 02.33	

Certificate of Analytical Results 612809

LT Environmental, Inc., Arvada, CO

Palmillo State Flowline 1

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612809-003	Date Collected:	01.25.19 14.10	Sample Depth:	16 - 18 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.30.19 11.00	Basis:	Wet Weight
Seq Number:	3077576				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	01.30.19 23.10	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.29.19 16.00	Basis:	Wet Weight
Seq Number:	3077483				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	01.30.19 00.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	01.30.19 00.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	01.30.19 00.47	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	01.30.19 00.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	01.30.19 00.47	
o-Terphenyl	84-15-1	99	%	70-135	01.30.19 00.47	

Certificate of Analytical Results 612809

LT Environmental, Inc., Arvada, CO

Palmillo State Flowline 1

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612809-003	Date Collected:	01.25.19 14.10	Sample Depth:	16 - 18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.29.19 15.00	Basis:	Wet Weight
Seq Number:	3077498				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.30.19 02.52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.30.19 02.52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.30.19 02.52	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.30.19 02.52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.30.19 02.52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.30.19 02.52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.30.19 02.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	01.30.19 02.52	
1,4-Difluorobenzene	540-36-3	111	%	70-130	01.30.19 02.52	

Certificate of Analytical Results 612809

LT Environmental, Inc., Arvada, CO

Palmillo State Flowline 1

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612809-004	Date Collected:	01.25.19 14.30	Sample Depth:	4 - 14 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.30.19 11.00	Basis:	Wet Weight
Seq Number:	3077576				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**52.0**	4.95	mg/kg	01.30.19 23.32		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.29.19 16.00	Basis:	Wet Weight
Seq Number:	3077483				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.19 01.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.19 01.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.30.19 01.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.19 01.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.30.19 01.07	
o-Terphenyl	84-15-1	93	%	70-135	01.30.19 01.07	

Certificate of Analytical Results 612809

LT Environmental, Inc., Arvada, CO

Palmillo State Flowline 1

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612809-004	Date Collected:	01.25.19 14.30	Sample Depth:	4 - 14 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.29.19 15.00	Basis:	Wet Weight
Seq Number:	3077498				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.30.19 03.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.30.19 03.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.30.19 03.11	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.30.19 03.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.30.19 03.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.30.19 03.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.30.19 03.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	01.30.19 03.11	
4-Bromofluorobenzene	460-00-4	113	%	70-130	01.30.19 03.11	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 612809

LT Environmental, Inc.

Palmillo State Flowline 1

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3077576 Matrix: Solid Date Prep: 01.30.19
MB Sample Id: 7670788-1-BLK LCS Sample Id: 7670788-1-BKS LCSD Sample Id: 7670788-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	258	103	254	102	90-110	2	20	mg/kg	01.30.19 22:20	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3077576 Matrix: Soil Date Prep: 01.30.19
Parent Sample Id: 612806-001 MS Sample Id: 612806-001 S MSD Sample Id: 612806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	342	250	611	108	602	104	90-110	1	20	mg/kg	01.30.19 22:39	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3077576 Matrix: Soil Date Prep: 01.30.19
Parent Sample Id: 612810-004 MS Sample Id: 612810-004 S MSD Sample Id: 612810-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.52	249	286	111	268	104	90-110	6	20	mg/kg	01.31.19 00:09	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3077483 Matrix: Solid Date Prep: 01.29.19
MB Sample Id: 7670692-1-BLK LCS Sample Id: 7670692-1-BKS LCSD Sample Id: 7670692-1-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	924	92	930	93	70-135	1	20	mg/kg	01.29.19 22:07	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1050	105	70-135	1	20	mg/kg	01.29.19 22:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		126		127		70-135	%	01.29.19 22:07
o-Terphenyl	106		115		118		70-135	%	01.29.19 22:07

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 612809

LT Environmental, Inc.

Palmillo State Flowline 1

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3077483 Matrix: Soil Date Prep: 01.29.19
Parent Sample Id: 612806-001 MS Sample Id: 612806-001 S MSD Sample Id: 612806-001 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	884	88	911	91	70-135	3	20	mg/kg	01.29.19 23:07	
Diesel Range Organics (DRO)	<8.12	999	888	89	933	94	70-135	5	20	mg/kg	01.29.19 23:07	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		127		70-135	%	01.29.19 23:07
o-Terphenyl	114		118		70-135	%	01.29.19 23:07

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3077498 Matrix: Solid Date Prep: 01.29.19
MB Sample Id: 7670733-1-BLK LCS Sample Id: 7670733-1-BKS LCSD Sample Id: 7670733-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.108	107	0.105	105	70-130	3	35	mg/kg	01.29.19 23:44	
Toluene	<0.000459	0.101	0.0959	95	0.0937	94	70-130	2	35	mg/kg	01.29.19 23:44	
Ethylbenzene	<0.000569	0.101	0.0913	90	0.0893	90	70-130	2	35	mg/kg	01.29.19 23:44	
m,p-Xylenes	<0.00102	0.202	0.177	88	0.175	88	70-130	1	35	mg/kg	01.29.19 23:44	
o-Xylene	<0.000347	0.101	0.0905	90	0.0887	89	70-130	2	35	mg/kg	01.29.19 23:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		107		107		70-130	%	01.29.19 23:44
4-Bromofluorobenzene	95		103		102		70-130	%	01.29.19 23:44

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3077498 Matrix: Soil Date Prep: 01.29.19
Parent Sample Id: 612806-001 MS Sample Id: 612806-001 S MSD Sample Id: 612806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.101	101	0.0997	100	70-130	1	35	mg/kg	01.30.19 00:22	
Toluene	<0.000457	0.100	0.0903	90	0.0889	89	70-130	2	35	mg/kg	01.30.19 00:22	
Ethylbenzene	<0.000566	0.100	0.0858	86	0.0848	85	70-130	1	35	mg/kg	01.30.19 00:22	
m,p-Xylenes	<0.00102	0.200	0.168	84	0.167	83	70-130	1	35	mg/kg	01.30.19 00:22	
o-Xylene	<0.000345	0.100	0.0848	85	0.0839	84	70-130	1	35	mg/kg	01.30.19 00:22	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		107		70-130	%	01.30.19 00:22
4-Bromofluorobenzene	108		106		70-130	%	01.30.19 00:22

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

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

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

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

Chain of Custody

Work Order No: 612809

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	GGreen@LTenv.com / Abaker@LTenv.com

Work Order Comments

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

Project Name:	Palmillo State Flowline 1	Turn Around	
Project Number:	2RP2849	Routine	☐
P.O. Number:		Rush:	1/28/2019
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	1.5/1.4	Thermometer ID	R8	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
FS06	S	1/25/19	1330	16'-18'	1	X	X	X
SW09	S	1/25/19	1350	4'-14'	1	X	X	X
FS07	S	1/25/19	1410	16'-18'	1	X	X	X
SW10	S	1/25/19	1430	4'-14'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		01/25/2019 1700	2		1/29/19 1300
3			4		
5			6		

7743 3120 8032

Revised Date 051418 Rev. 2018.1

Final 1.000

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/29/2019 01:15:00 PM

Work Order #: 612809

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)?	1.4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 01/29/2019

Checklist reviewed by: Jessica Kramer Date: 01/29/2019

Analytical Report 612806

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Palmillo State 1 Flowline

31-JAN-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

31-JAN-19

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

Reference: XENCO Report No(s): **612806**
Palmillo State 1 Flowline
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 612806. 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. 612806 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,

Julian Martinez
Midland Laboratory Director

Sample Cross Reference 612806

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	01-28-19 09:40	10 - 12 ft	612806-001
SW11	S	01-28-19 10:00	4 - 12 ft	612806-002

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3077498 BTEX by EPA 8021B

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

Certificate of Analysis Summary 612806

LT Environmental, Inc., Arvada, CO

Project Name: Palmillo State 1 Flowline

Project Id:
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Jan-29-19 01:15 pm
Report Date: 31-JAN-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	612806-001		612806-002					
	Field Id:	FS01		SW11					
	Depth:	10-12 ft		4-12 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Jan-28-19 09:40		Jan-28-19 10:00					
BTEX by EPA 8021B	***Extracted:***	Jan-29-19 15:00		Jan-29-19 15:00					
	Analyzed:	Jan-30-19 01:36		Jan-30-19 01:55					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00200	0.00200				
Toluene		<0.00200	0.00200	<0.00200	0.00200				
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200				
m,p-Xylenes		<0.00399	0.00399	<0.00401	0.00401				
o-Xylene		<0.00200	0.00200	<0.00200	0.00200				
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200				
Total BTEX		<0.00200	0.00200	<0.00200	0.00200				
Inorganic Anions by EPA 300	***Extracted:***	Jan-30-19 11:00		Jan-30-19 11:00					
	Analyzed:	Jan-30-19 22:33		Jan-30-19 22:51					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		342	4.99	62.8	4.98				
TPH by SW8015 Mod	***Extracted:***	Jan-29-19 16:00		Jan-29-19 16:00					
	Analyzed:	Jan-29-19 22:47		Jan-29-19 23:47					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0				

Julian Martinez
Midland Laboratory Director

Certificate of Analytical Results 612806

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612806-001	Date Collected:	01.28.19 09.40	Sample Depth:	10 - 12 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.30.19 11.00	Basis:	Wet Weight
Seq Number:	3077576				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**342**	4.99	mg/kg	01.30.19 22.33		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.29.19 16.00	Basis:	Wet Weight
Seq Number:	3077483				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.29.19 22.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.29.19 22.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.29.19 22.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.29.19 22.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.29.19 22.47	
o-Terphenyl	84-15-1	96	%	70-135	01.29.19 22.47	

Certificate of Analytical Results 612806

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612806-001	Date Collected:	01.28.19 09.40	Sample Depth:	10 - 12 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.29.19 15.00	Basis:	Wet Weight
Seq Number:	3077498				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.30.19 01.36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.30.19 01.36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.30.19 01.36	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.30.19 01.36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.30.19 01.36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.30.19 01.36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.30.19 01.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	01.30.19 01.36	
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.30.19 01.36	

Certificate of Analytical Results 612806

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW11**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612806-002	Date Collected:	01.28.19 10.00	Sample Depth:	4 - 12 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.30.19 11.00	Basis:	Wet Weight
Seq Number:	3077576				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**62.8**	4.98	mg/kg	01.30.19 22.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.29.19 16.00	Basis:	Wet Weight
Seq Number:	3077483				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.29.19 23.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.29.19 23.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.29.19 23.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.29.19 23.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	01.29.19 23.47	
o-Terphenyl	84-15-1	91	%	70-135	01.29.19 23.47	

Certificate of Analytical Results 612806

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW11**	Matrix:	Soil	Date Received:	01.29.19 13.15
Lab Sample Id:	612806-002	Date Collected:	01.28.19 10.00	Sample Depth:	4 - 12 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.29.19 15.00	Basis:	Wet Weight
Seq Number:	3077498				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.30.19 01.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.30.19 01.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.30.19 01.55	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.30.19 01.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.30.19 01.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.30.19 01.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.30.19 01.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	124	%	70-130	01.30.19 01.55	
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.30.19 01.55	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 612806

LT Environmental, Inc.

Palmillo State 1 Flowline

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3077576 Matrix: Solid Date Prep: 01.30.19
MB Sample Id: 7670788-1-BLK LCS Sample Id: 7670788-1-BKS LCSD Sample Id: 7670788-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	258	103	254	102	90-110	2	20	mg/kg	01.30.19 22:20	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3077576 Matrix: Soil Date Prep: 01.30.19
Parent Sample Id: 612806-001 MS Sample Id: 612806-001 S MSD Sample Id: 612806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	342	250	611	108	602	104	90-110	1	20	mg/kg	01.30.19 22:39	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3077576 Matrix: Soil Date Prep: 01.30.19
Parent Sample Id: 612810-004 MS Sample Id: 612810-004 S MSD Sample Id: 612810-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.52	249	286	111	268	104	90-110	6	20	mg/kg	01.31.19 00:09	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3077483 Matrix: Solid Date Prep: 01.29.19
MB Sample Id: 7670692-1-BLK LCS Sample Id: 7670692-1-BKS LCSD Sample Id: 7670692-1-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	924	92	930	93	70-135	1	20	mg/kg	01.29.19 22:07	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1050	105	70-135	1	20	mg/kg	01.29.19 22:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		126		127		70-135	%	01.29.19 22:07
o-Terphenyl	106		115		118		70-135	%	01.29.19 22:07

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 612806

LT Environmental, Inc.

Palmillo State 1 Flowline

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3077483 Matrix: Soil Date Prep: 01.29.19
Parent Sample Id: 612806-001 MS Sample Id: 612806-001 S MSD Sample Id: 612806-001 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	884	88	911	91	70-135	3	20	mg/kg	01.29.19 23:07	
Diesel Range Organics (DRO)	<8.12	999	888	89	933	94	70-135	5	20	mg/kg	01.29.19 23:07	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		127		70-135	%	01.29.19 23:07
o-Terphenyl	114		118		70-135	%	01.29.19 23:07

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3077498 Matrix: Solid Date Prep: 01.29.19
MB Sample Id: 7670733-1-BLK LCS Sample Id: 7670733-1-BKS LCSD Sample Id: 7670733-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.108	107	0.105	105	70-130	3	35	mg/kg	01.29.19 23:44	
Toluene	<0.000459	0.101	0.0959	95	0.0937	94	70-130	2	35	mg/kg	01.29.19 23:44	
Ethylbenzene	<0.000569	0.101	0.0913	90	0.0893	90	70-130	2	35	mg/kg	01.29.19 23:44	
m,p-Xylenes	<0.00102	0.202	0.177	88	0.175	88	70-130	1	35	mg/kg	01.29.19 23:44	
o-Xylene	<0.000347	0.101	0.0905	90	0.0887	89	70-130	2	35	mg/kg	01.29.19 23:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		107		107		70-130	%	01.29.19 23:44
4-Bromofluorobenzene	95		103		102		70-130	%	01.29.19 23:44

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3077498 Matrix: Soil Date Prep: 01.29.19
Parent Sample Id: 612806-001 MS Sample Id: 612806-001 S MSD Sample Id: 612806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.101	101	0.0997	100	70-130	1	35	mg/kg	01.30.19 00:22	
Toluene	<0.000457	0.100	0.0903	90	0.0889	89	70-130	2	35	mg/kg	01.30.19 00:22	
Ethylbenzene	<0.000566	0.100	0.0858	86	0.0848	85	70-130	1	35	mg/kg	01.30.19 00:22	
m,p-Xylenes	<0.00102	0.200	0.168	84	0.167	83	70-130	1	35	mg/kg	01.30.19 00:22	
o-Xylene	<0.000345	0.100	0.0848	85	0.0839	84	70-130	1	35	mg/kg	01.30.19 00:22	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		107		70-130	%	01.30.19 00:22
4-Bromofluorobenzene	108		106		70-130	%	01.30.19 00:22

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

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

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

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

Chain of Custody

Work Order No: 612806

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	Ggreen@LTenv.com/Abaker@LTenv.com

Work Order Comments

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

Project Name:	Palmillo State J Flowline	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP-2849	Rush: 1/29/2019	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	1.5/1.4	Thermometer ID	R8	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
FS01	S	1/28/2019	0940	10'-12'	1	X	X	X
SW11	S	1/28/2019	1000	4'-12'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

Garrett Green 01/28/2019

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Garrett Green	Timothy P. Elliott	01/28/2019/1510	2		~~1/28/19 15:30~~ KJ
3				4		1/29/19 1315
5				6		

Revised Date 051418 Rev. 2018.1

77431208038

Final 1.000

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/29/2019 01:15:00 PM

Work Order #: 612806

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)?	1.4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 01/29/2019

Checklist reviewed by: Jessica Kramer Date: 01/29/2019

Analytical Report 613479

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Palmillo State 1 Flowline

2RP-2849

06-FEB-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

06-FEB-19

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

Reference: XENCO Report No(s): **613479**
Palmillo State 1 Flowline
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 613479. 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. 613479 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

Jessica Kramer
Project Assistant

Sample Cross Reference 613479

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW08	S	02-04-19 09:40	2 - 8 ft	613479-001
SW12	S	02-04-19 13:35	2 - 8 ft	613479-002

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078196 BTEX by EPA 8021B

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

Certificate of Analysis Summary 613479

LT Environmental, Inc., Arvada, CO

Project Name: Palmillo State 1 Flowline

Project Id: 2RP-2849
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Feb-05-19 12:39 pm
Report Date: 06-FEB-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	613479-001		613479-002					
	Field Id:	SW08		SW12					
	Depth:	2-8 ft		2-8 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Feb-04-19 09:40		Feb-04-19 13:35					
BTEX by EPA 8021B	***Extracted:***	Feb-05-19 14:30		Feb-05-19 14:30					
	Analyzed:	Feb-06-19 01:40		Feb-06-19 02:02					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00202	0.00202				
Toluene		<0.00200	0.00200	<0.00202	0.00202				
Ethylbenzene		<0.00200	0.00200	<0.00202	0.00202				
m,p-Xylenes		<0.00400	0.00400	<0.00403	0.00403				
o-Xylene		<0.00200	0.00200	<0.00202	0.00202				
Total Xylenes		<0.00200	0.00200	<0.00202	0.00202				
Total BTEX		<0.00200	0.00200	<0.00202	0.00202				
Inorganic Anions by EPA 300	***Extracted:***	Feb-05-19 16:30		Feb-05-19 16:30					
	Analyzed:	Feb-06-19 01:47		Feb-06-19 02:09					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		<4.97	4.97	49.1	4.99				
TPH by SW8015 Mod	***Extracted:***	Feb-05-19 17:00		Feb-05-19 17:00					
	Analyzed:	Feb-06-19 06:06		Feb-06-19 06:25					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 613479

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	02.05.19 12.39
Lab Sample Id:	613479-001	Date Collected:	02.04.19 09.40	Sample Depth:	2 - 8 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.05.19 16.30	Basis:	Wet Weight
Seq Number:	3078193				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	02.06.19 01.47	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.05.19 17.00	Basis:	Wet Weight
Seq Number:	3078223				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.06.19 06.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.06.19 06.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.06.19 06.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.06.19 06.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.06.19 06.06	
o-Terphenyl	84-15-1	98	%	70-135	02.06.19 06.06	

Certificate of Analytical Results 613479

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	02.05.19 12.39
Lab Sample Id:	613479-001	Date Collected:	02.04.19 09.40	Sample Depth:	2 - 8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.05.19 14.30	Basis:	Wet Weight
Seq Number:	3078196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.06.19 01.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.06.19 01.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.06.19 01.40	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.06.19 01.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.06.19 01.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.06.19 01.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.06.19 01.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	02.06.19 01.40	
1,4-Difluorobenzene	540-36-3	87	%	70-130	02.06.19 01.40	

Certificate of Analytical Results 613479

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW12**	Matrix:	Soil	Date Received:	02.05.19 12.39
Lab Sample Id:	613479-002	Date Collected:	02.04.19 13.35	Sample Depth:	2 - 8 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.05.19 16.30	Basis:	Wet Weight
Seq Number:	3078193				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**49.1**	4.99	mg/kg	02.06.19 02.09		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.05.19 17.00	Basis:	Wet Weight
Seq Number:	3078223				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.06.19 06.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.06.19 06.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.06.19 06.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.06.19 06.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.06.19 06.25	
o-Terphenyl	84-15-1	94	%	70-135	02.06.19 06.25	

Certificate of Analytical Results 613479

LT Environmental, Inc., Arvada, CO

Palmillo State 1 Flowline

Sample Id:	**SW12**	Matrix:	Soil	Date Received:	02.05.19 12.39
Lab Sample Id:	613479-002	Date Collected:	02.04.19 13.35	Sample Depth:	2 - 8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.05.19 14.30	Basis:	Wet Weight
Seq Number:	3078196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.06.19 02.02	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.06.19 02.02	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.06.19 02.02	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.06.19 02.02	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.06.19 02.02	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.06.19 02.02	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.06.19 02.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	70-130	02.06.19 02.02	
1,4-Difluorobenzene	540-36-3	86	%	70-130	02.06.19 02.02	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 613479

LT Environmental, Inc.

Palmillo State 1 Flowline

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3078193 Matrix: Solid Date Prep: 02.05.19
MB Sample Id: 7671129-1-BLK LCS Sample Id: 7671129-1-BKS LCSD Sample Id: 7671129-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	250	100	249	100	90-110	0	20	mg/kg	02.06.19 00:58	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3078193 Matrix: Soil Date Prep: 02.05.19
Parent Sample Id: 613478-005 MS Sample Id: 613478-005 S MSD Sample Id: 613478-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.855	249	259	104	251	101	90-110	3	20	mg/kg	02.06.19 01:16	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3078223 Matrix: Solid Date Prep: 02.05.19
MB Sample Id: 7671161-1-BLK LCS Sample Id: 7671161-1-BKS LCSD Sample Id: 7671161-1-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	895	90	908	91	70-135	1	20	mg/kg	02.05.19 22:36	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1020	102	70-135	1	20	mg/kg	02.05.19 22:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		125		126		70-135	%	02.05.19 22:36
o-Terphenyl	95		105		127		70-135	%	02.05.19 22:36

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3078223 Matrix: Soil Date Prep: 02.05.19
Parent Sample Id: 613477-001 MS Sample Id: 613477-001 S MSD Sample Id: 613477-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	813	81	789	79	70-135	3	20	mg/kg	02.05.19 23:34	
Diesel Range Organics (DRO)	<8.11	998	907	91	879	88	70-135	3	20	mg/kg	02.05.19 23:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		116		70-135	%	02.05.19 23:34
o-Terphenyl	111		104		70-135	%	02.05.19 23:34

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

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

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

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

Final 1.000

QC Summary 613479

LT Environmental, Inc.

Palmillo State 1 Flowline

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3078196 Matrix: Solid Date Prep: 02.05.19

MB Sample Id: 7671157-1-BLK LCS Sample Id: 7671157-1-BKS LCSD Sample Id: 7671157-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.111	110	0.118	118	70-130	6	35	mg/kg	02.05.19 16:45	
Toluene	<0.00201	0.101	0.0873	86	0.0950	95	70-130	8	35	mg/kg	02.05.19 16:45	
Ethylbenzene	<0.00201	0.101	0.106	105	0.106	106	70-130	0	35	mg/kg	02.05.19 16:45	
m,p-Xylenes	<0.00402	0.201	0.228	113	0.221	111	70-130	3	35	mg/kg	02.05.19 16:45	
o-Xylene	<0.00201	0.101	0.102	101	0.0997	100	70-130	2	35	mg/kg	02.05.19 16:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		88		99		70-130	%	02.05.19 16:45
4-Bromofluorobenzene	86		103		87		70-130	%	02.05.19 16:45

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3078196 Matrix: Soil Date Prep: 02.05.19

Parent Sample Id: 613477-001 MS Sample Id: 613477-001 S MSD Sample Id: 613477-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0737	74	0.0791	78	70-130	7	35	mg/kg	02.05.19 17:28	
Toluene	<0.00200	0.100	0.0626	63	0.0645	64	70-130	3	35	mg/kg	02.05.19 17:28	X
Ethylbenzene	<0.00200	0.100	0.0749	75	0.0820	81	70-130	9	35	mg/kg	02.05.19 17:28	
m,p-Xylenes	0.00169	0.200	0.141	70	0.159	78	70-130	12	35	mg/kg	02.05.19 17:28	
o-Xylene	<0.00200	0.100	0.0676	68	0.0734	73	70-130	8	35	mg/kg	02.05.19 17:28	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		109		70-130	%	02.05.19 17:28
4-Bromofluorobenzene	102		100		70-130	%	02.05.19 17:28

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

Work Order No: 613479

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	Ggreen@LTenv.com / Abaker@LTenv.com

Work Order Comments

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

Project Name:	Palmillo State 1 Flowline	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP-3849	Rush: 2/4/19	
Sampler's Name:	Garret Green	Due Date: 2/6/19	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.3 / 0.2	Thermometer ID	IR6
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SW08	S	2/4/19	0940	2'-8'	1	X	X	X
SW12	S	2/4/19	1335	2'-8'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

Garrett Green 02/04/19

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Garrett Green		02/04/2019 1500	2	2/5/19 1239	2/4/19 15:30
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 13 of 15

ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST

CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 04FEB19
ACTWGT: 53.00 LB
CAD: 101813706/INET4100
DIMS: 22x15x16 IN

BILL RECIPIENT

TO HOLD FOR XENCO
FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S

MIDLAND TX 79711

(806) 794-1296
INV:
PO:

REF:

DEPT:

565J2/0E3D/23AD

FedEx Express

TUE - 05 FEB HOLD
STANDARD OVERNIGHT

TRK# 7743 8805 7143
0201

HLD

41 MAFA

MAFA

TX-US LBB

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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our 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: 02/05/2019 12:39:00 PM

Work Order #: 613479

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 02/05/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 02/05/2019
Jessica Kramer

View of release area prior to excavation.

Project: 012918072	XTO Energy, Inc. Palmillo State #1	LTE Advancing Opportunity
December 2018	Photographic Log	

View of excavation.

Project: 012918072	XTO Energy, Inc. Palmillo State #1	LTE Advancing Opportunity
December 2018	Photographic Log	

View of excavation.

Project: 012918072	XTO Energy, Inc. Palmillo State #1	LTE Advancing Opportunity
February 2019	Photographic Log	