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	NAB1913041640
District RP	2RP-5402
Facility ID	
Application ID	pAB1913040944

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # *(assigned by OCD)* NAB1913041640
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.149069° Longitude -103.922653°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Muy Wayno Frac Pond	Site Type Bulk Storage Facility
Date Release Discovered 4/15/2019	API# *(if applicable)* 30-015-37700 Muy Wayno St 1H

Unit Letter	Section	Township	Range	County
C	7	25S	30E	Eddy

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name:* New Mexico)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 61	Volume Recovered (bbls) 60
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Contract crew reported release of fluids to temporary lined containment and to the well pad when a hose parted within the containment. A vacuum truck recovered free fluids. The hose was replaced and operations resumed. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1913041640
District RP	2RP-5402
Facility ID	
Application ID	pAB1913040944

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by Amy Ruth to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), and Ryan Mann (SLO) on 4/15/2019 by email

Initial Response

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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:
N/A

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: [signature] Date: 4/26/2019

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

OCD Only

Received by: [signature] Date: 5/10/2019

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5402
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-5402
Facility ID	
Application ID	

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

Printed Name: _____Kyle Littrell_____ Title: ____SH&E Supervisor_____

Signature:_____ Date: __07/12/2019_____

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-5402
Facility ID	
Application ID	

Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

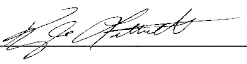
☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/12/2019

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: _____

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

July 12, 2019

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

RE: Closure Request
Muy Wayno Frac Pond
Remediation Permit Number 2RP-5402
Eddy County, New Mexico

Dear Mr. Bratcher

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request report detailing soil sampling and excavation activities at the Muy Wayno Frac Pond (Site) in Unit C, Section 7, Township 25 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following a produced water release at the Site. The caliche well pad at the Site has been recently constructed to allow for the storage and operation of a frac pond; there is no active well on site. Based on the excavation activities and results of the soil sampling events, XTO is submitting this Closure Request, describing remediation that has occurred and requesting no further action for this release event.

RELEASE BACKGROUND

On April 15, 2019, a produced water hose parted from a temporary above ground storage tank (AST), which is situated on top of a temporary poly containment liner and resulted in the release of 61 barrels (bbls) of produced water. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 60 bbls of produced water were recovered. The hose was replaced, and operations resumed. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on April 26, 2019, and was assigned Remediation Permit (RP) Number 2RP-5402 (Attachment 1).

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 320857103553301, located approximately 1,124 feet northwest of the Site. The water well has a depth to groundwater of

264 feet and a total depth of 385 feet bgs. Ground surface elevation at the water well location is 3,171 feet above mean sea level (AMSL), which is approximately 13 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is a seasonal streambed located approximately 183 feet south of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium potential karst area.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

On May 6, 2019, LTE personnel inspected the Site to evaluate the release extent. Surficial staining was observed along the northern side of the temporary AST, within the caliche well pad. LTE personnel collected five preliminary soil samples (SS01 through SS05) within the release extent at a depth of approximately 0.5 feet bgs to assess the lateral extent of soil impacts. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positing System (GPS) unit and are depicted on Figure 2.

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

Based on laboratory analytical results from preliminary soil samples SS01 and SS03, excavation of impacted soil appeared to be warranted. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

On July 2 and July 3, 2019, LTE personnel was at the Site to oversee excavation of impacted soil east of the above ground water line, as indicated by laboratory analytical results from preliminary soil sample SS01 and SS03. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 and SW02 were collected from the sidewalls of the excavation at depths ranging from ground surface to approximately 1-foot bgs. Composite soil samples FS01 and FS02 were collected from the floor of the excavation at a depth of approximately 1-foot bgs and submitted for laboratory analysis of BTEX, TPH, and chloride. The excavation extent and confirmation soil sample locations are depicted on Figure 3. Soil at the surface of SS03 was addressed manually.

Assessment for further excavation of impacted soil to the west of the aboveground water line in the vicinity of preliminary soil sample SS03 was conducted on July 3, 2019. Lateral and vertical delineation soil samples were collected in the vicinity of preliminary soil sample SS03, via hand auger. Boreholes were advanced at preliminary soil sample locations SS02 through SS04 and at one new location, SS05, located approximately 10 feet west of preliminary soil sample location SS03. Boreholes SS02, SS03, and SS05 were advanced to approximately 0.75 feet bgs and borehole SS04 was advanced to 1-foot bgs (SS04A). Samples were collected from the bottom of each borehole and submitted for laboratory analysis of BTEX, TPH, and chloride. Soil samples from the four boreholes were field screened utilizing a PID and Hach® chloride QuanTab® test strips. Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 3.

In total, the excavation extent measured approximately 1,580 square feet in area. A total of approximately 60 cubic yards of impacted soil were removed from the excavation. The impacted soil will be transported and properly disposed of at the Lea Land landfill facility located in Hobbs, New Mexico. The horizontal extent of the excavation is presented on Figure 3.

ANALYTICAL RESULTS

Laboratory analytical results indicated that chloride concentrations in preliminary soil samples SS01 and SS03 at approximately 0.5 feet bgs exceeded the NMOCD Table 1 Closure Criteria. Based on the analytical results from preliminary soil sample SS01 at approximately 1 -foot bgs and visual soil staining on the north side of the AST, impacted soil was excavated to below NMOCD Table 1 Closure Criteria as indicated by laboratory analytical results for confirmation floor soil samples FS01 and FS02 and confirmation sidewall soil samples SW01 and SW02.

Laboratory analytical results for delineation soil samples SS02A through SS05A indicated soil west of the water line and in the vicinity of preliminary soil sample SS03 was in compliance with the NMOCD Table 1 Closure Criteria.

Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 2.

CLOSURE REQUEST

Laboratory analytical results indicated that chloride concentrations in preliminary soil samples SS01 and SS03 at approximately 0.5 feet bgs exceeded the NMOCD Table 1 Closure Criteria. As a result, impacted soil was excavated within the release extent. A total of approximately 60 cubic yards of impacted soil were excavated from the Site. Additional delineation soil sampling activities in the area between an aboveground pipeline and buried electrical line indicated excavation of soil from that area of the release extent was unnecessary. As a result, XTO respectfully requests closure for RP Number 2RP-5402. Upon approval of this closure request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

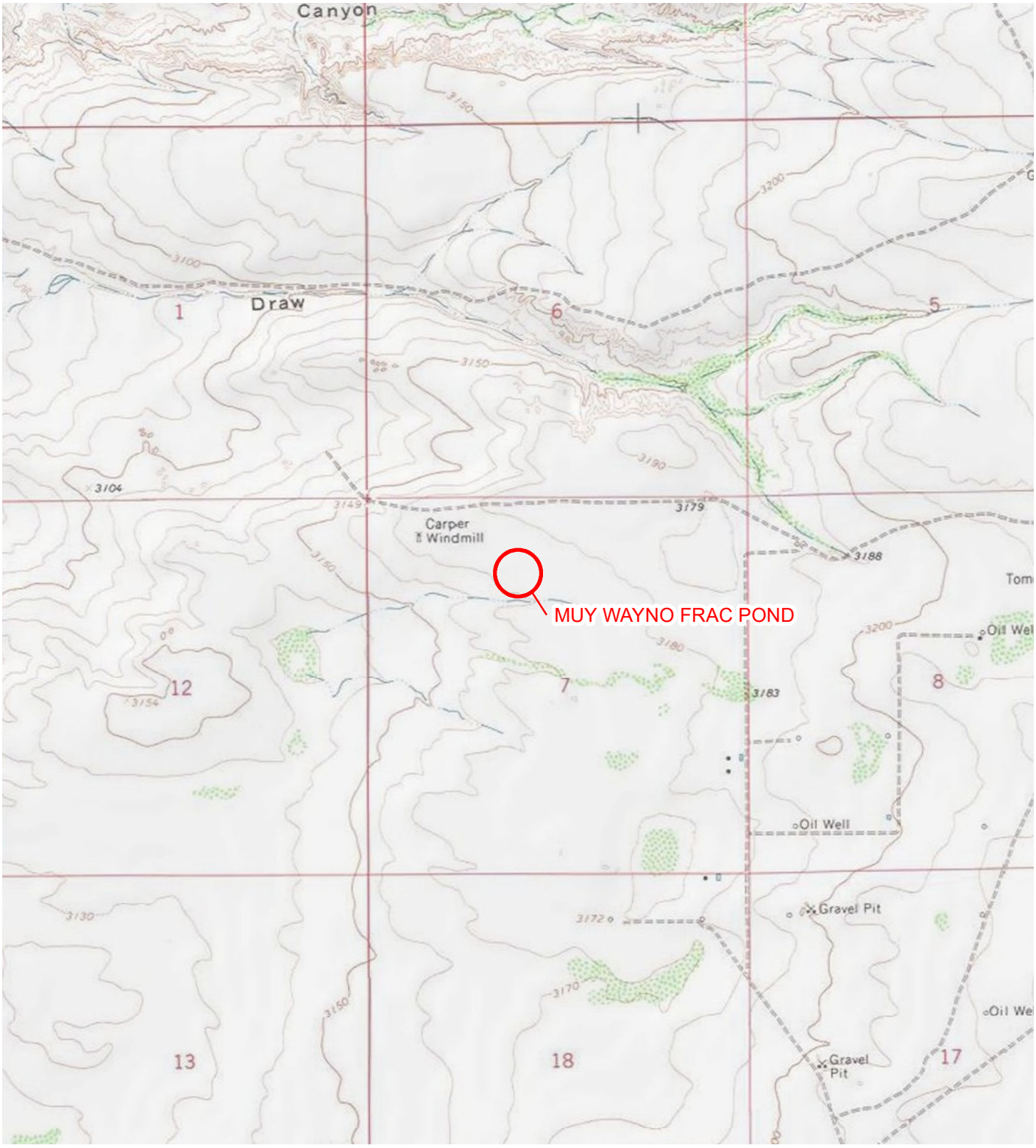
Carol Ann Whaley
Staff Geologist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Ryan Mann, State Land Office
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Mike Bratcher, NMOCD

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Table 1	Soil Analytical Reports
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-5402)
Attachment 2	Photographic Log
Attachment 3	Lithologic / Soil Sample Logs
Attachment 4	Laboratory Analytical Reports



LEGEND

SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

0 2,000 4,000

Feet

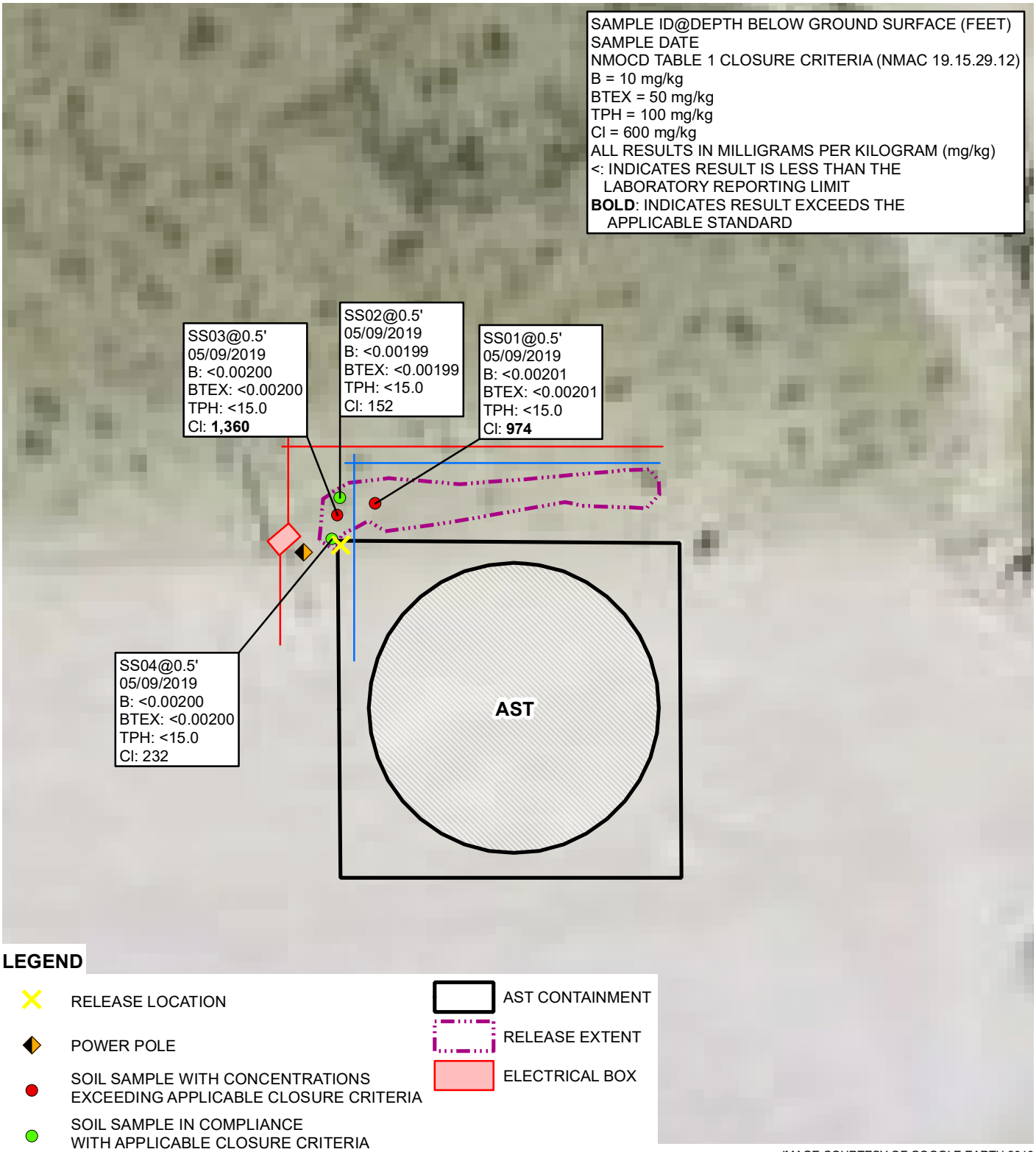
N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBERS 2RP-5402

FIGURE 1
SITE LOCATION MAP
MUY WAYNO FRAC POND
UNIT C SEC 7 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

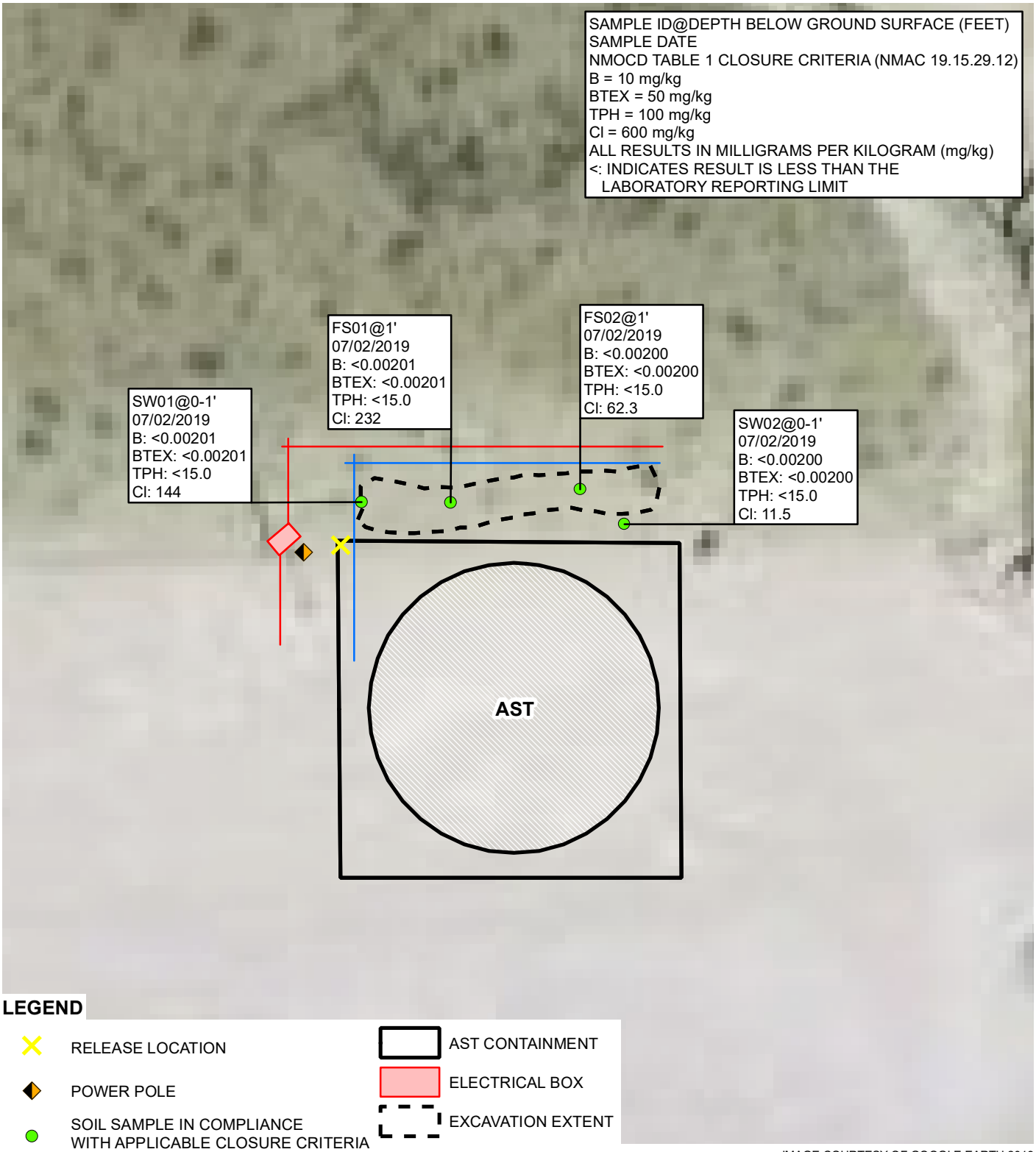
P:\XTO Energy\GIS\MXD\012919080_MUY WAYNO FRAC POND\012919080_FIG01_SL_5402.mxd



AST: ABOVEGROUND STORAGE TANK
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-5402

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
MUY WAYNO FRAC POND
UNIT C SEC 7 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919080_MUY WAYNO FRAC POND\012919080_FIG02_PRELIMINARY_5402.mxd



AST: ABOVEGROUND STORAGE TANK
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-5402

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
MUY WAYNO FRAC POND
UNIT C SEC 7 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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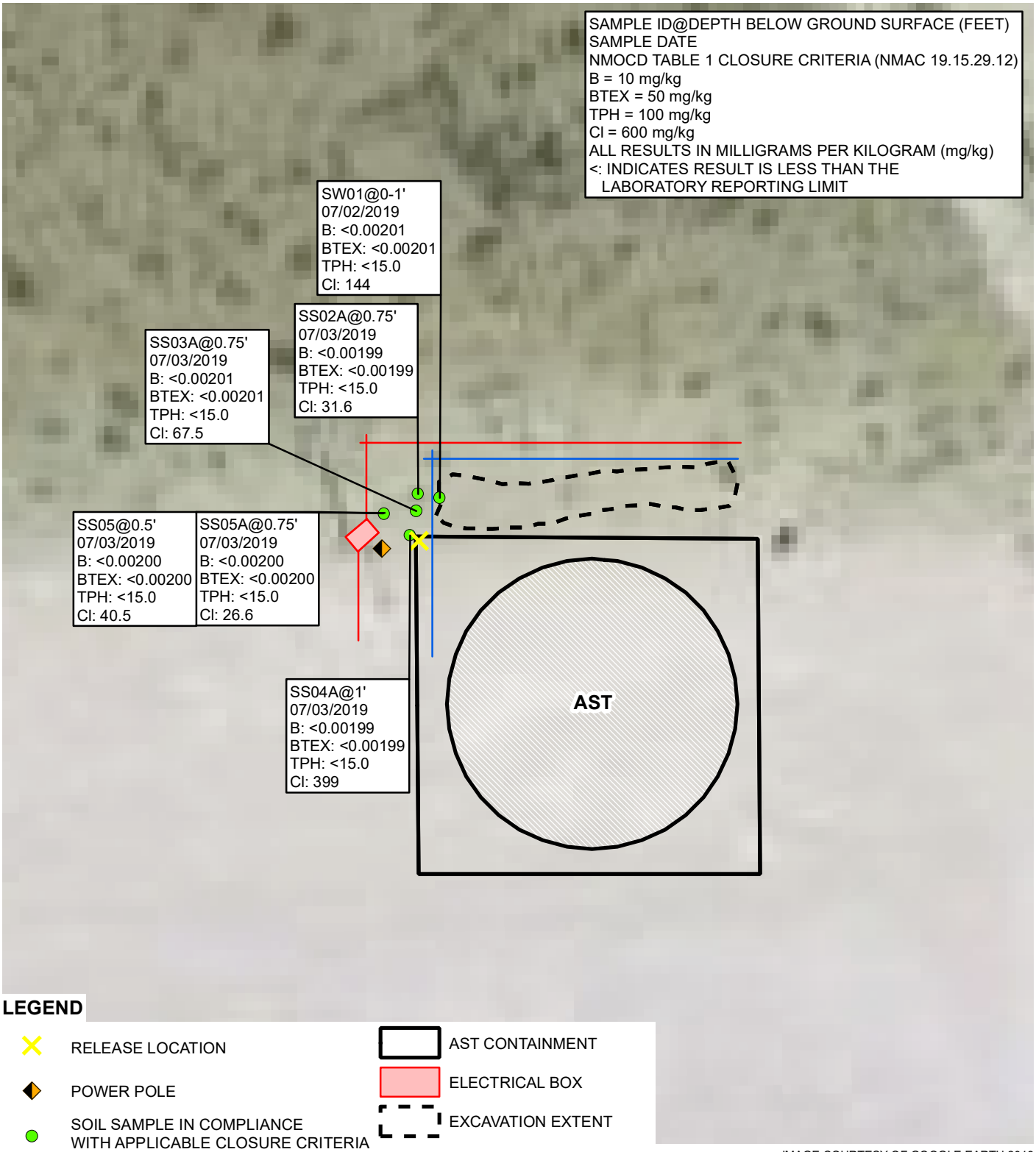

AST: ABOVEGROUND STORAGE TANK
B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5402

FIGURE 4
DELINEATION SOIL SAMPLE LOCATIONS
MUY WAYNO FRAC POND
UNIT C SEC 7 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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TABLE 1
SOIL ANALYTICAL RESULTS

MUY WAYNO FRAC POND
REMEDIATION PERMIT NUMBER 2RP-5402
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	05/09/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	**974**
SS02	0.5	05/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	152
SS03	0.5	05/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**1,360**
SS04	0.5	05/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	232
FS01	1	07/02/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	26.2
FS02	1	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	62.3
SW01	0 - 1	07/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	144
SW02	0 - 1	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	11.5
SS02A	0.75	07/03/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	31.6
SS03A	0.75	07/03/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	67.5
SS04A	1	07/03/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	399
SS05	0.5	07/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	40.5
SS05A	0.75	07/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	26.6
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
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
ORO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
TPH - total petroleum hydrocarbons
Bold - indicates result exceeds the applicable regulatory standard
< - indicates result is below laboratory reporting limits
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

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	NAB1913041640
District RP	2RP-5402
Facility ID	
Application ID	pAB1913040944

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # *(assigned by OCD)* NAB1913041640
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.149069° Longitude -103.922653°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Muy Wayno Frac Pond	Site Type Bulk Storage Facility
Date Release Discovered 4/15/2019	API# *(if applicable)* 30-015-37700 Muy Wayno St 1H

Unit Letter	Section	Township	Range	County
C	7	25S	30E	Eddy

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name:* New Mexico)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 61	Volume Recovered (bbls) 60
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Contract crew reported release of fluids to temporary lined containment and to the well pad when a hose parted within the containment. A vacuum truck recovered free fluids. The hose was replaced and operations resumed. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1913041640
District RP	2RP-5402
Facility ID	
Application ID	pAB1913040944

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by Amy Ruth to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), and Ryan Mann (SLO) on 4/15/2019 by email

Initial Response

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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:
N/A

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: [signature] Date: 4/26/2019

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

OCD Only

Received by: [signature] Date: 5/10/2019

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5402
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-5402
Facility ID	
Application ID	

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

Printed Name: _____Kyle Littrell_____ Title: ____SH&E Supervisor_____

Signature:_____ Date: __07/12/2019_____

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-5402
Facility ID	
Application ID	

Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

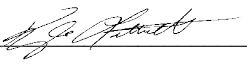
☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/12/2019

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: _____

Western view of excavated area north of the AST containment.

Project: 012919080	XTO Energy, Inc. Muy Wayno Frac Pond	LTE Advancing Opportunity
July 2, 2019	Photographic Log	

Northeastern view of the active pipelines area after the excavation was backfilled.

Project: 012919080	XTO Energy, Inc. Muy Wayno Frac Pond	LTE Advancing Opportunity
July 3, 2019	Photographic Log	

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

Compliance · Engineering · Remediation

Identifier:	Date:
SS02	7/3/2019
Project Name:	RP Number:
Muy Wayno Frac Pond	2RP-5402

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: SL	Method: hand auger

Lat/Long:	Field Screening: PID/HACH	Hole Diameter:	Total Depth: 0.75'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<180	2.2	no	SS02	0	0.5'	cche	gravel CALICHE, some sand, tan-brown, poorly graded, m-f grained
dry	<180	0.1	no	SS02A	1	0.75	cche	gravel CALICHE, some sand, tan, poorly graded, m-f grained
								Total Depth 0.75 foot bgs
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Compliance · Engineering · Remediation

Identifier:	Date:
SS03	7/3/2019
Project Name:	RP Number:
Muy Wayno Frac Pond	2RP-5402

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: SL	Method: hand auger

Lat/Long:	Field Screening: PID/HACH	Hole Diameter:	Total Depth: 0.75'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	1,708	2.2	no	SS03	0	0.5'	cche	gravel CALICHE, some sand, tan-brown, poorly graded, m-f grained
dry	<180	0.2	no	SS03A	1	0.75	cche	gravel CALICHE, some sand, tan, poorly graded, m-f grained
								Total Depth 0.75 foot bgs
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

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Identifier:	Date:
SS04	7/3/2019
Project Name:	RP Number:
Muy Wayno Frac Pond	2RP-5402

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: SL	Method: hand auger

Lat/Long:	Field Screening: PID/HACH	Hole Diameter:	Total Depth: 1'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	428	2.0	no	SS04	0	0.5'	cche	gravel CALICHE, some sand, tan-brown, poorly graded, m-f grained
dry	<180	0.0	no	SS04A	1	1'	cche	gravel CALICHE, some sand, tan, poorly graded, m-f grained
								Total Depth1 foot bgs
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Compliance · Engineering · Remediation

Identifier:	Date:
SS05	7/3/2019
Project Name:	RP Number:
Muy Wayno Frac Pond	2RP-5402

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: SL	Method: hand auger

Lat/Long:	Field Screening: PID/HACH	Hole Diameter:	Total Depth: 0.75'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<180	0.0	no	SS05	0	0.5'	cche	gravel CALICHE, some sand, tan-brown, poorly graded, m-f grained
dry	<180	0.0	no	SS05A	1	0.75	cche	gravel CALICHE, some sand, tan, poorly graded, m-f grained
								Total Depth 0.75 foot bgs
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

Analytical Report 624025

for

LT Environmental, Inc.

Project Manager: Dan Moir

MuyWayno Pond

17-MAY-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

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

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

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

17-MAY-19

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

Reference: XENCO Report No(s): **624025**
MuyWayno Pond
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 624025. 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. 624025 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 624025

LT Environmental, Inc., Arvada, CO

MuyWayno Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	05-09-19 11:30	.5 ft	624025-001
SS02	S	05-09-19 11:35	.5 ft	624025-002
SS03	S	05-09-19 11:40	.5 ft	624025-003
SS04	S	05-09-19 11:50	.5 ft	624025-004

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3089157 BTEX by EPA 8021B

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

Certificate of Analysis Summary 624025

LT Environmental, Inc., Arvada, CO

Project Name: MuyWayno Pond

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

Date Received in Lab: Mon May-13-19 10:50 am
Report Date: 17-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624025-001		624025-002		624025-003		624025-004					
	Field Id:	SS01		SS02		SS03		SS04					
	Depth:	.5- ft		.5- ft		.5- ft		.5- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	May-09-19 11:30		May-09-19 11:35		May-09-19 11:40		May-09-19 11:50					
BTEX by EPA 8021B	***Extracted:***	May-15-19 15:15		May-15-19 15:15		May-15-19 15:15		May-15-19 15:15					
	Analyzed:	May-15-19 19:23		May-15-19 19:42		May-15-19 20:01		May-15-19 20:20					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Toluene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Ethylbenzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
m,p-Xylenes		<0.00402	0.00402	<0.00398	0.00398	<0.00401	0.00401	<0.00399	0.00399				
o-Xylene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Total Xylenes		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Total BTEX		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	May-14-19 11:40		May-14-19 11:40		May-14-19 11:40		May-14-19 11:40					
	Analyzed:	May-14-19 13:38		May-14-19 13:45		May-14-19 13:52		May-14-19 14:00					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		974	24.9	152	5.01	1360	5.04	232	25.1				
TPH by SW8015 Mod	***Extracted:***	May-14-19 10:00		May-14-19 10:00		May-14-19 10:00		May-14-19 10:00					
	Analyzed:	May-14-19 20:12		May-14-19 20:32		May-14-19 20:52		May-14-19 21:11					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 624025

LT Environmental, Inc., Arvada, CO

MuyWayno Pond

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624025-001	Date Collected:	05.09.19 11.30	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.14.19 11.40	Basis:	Wet Weight
Seq Number:	3089035				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**974**	24.9	mg/kg	05.14.19 13.38		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.14.19 10.00	Basis:	Wet Weight
Seq Number:	3089069				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 20.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 20.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 20.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 20.12	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.14.19 20.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.14.19 20.12	
o-Terphenyl	84-15-1	103	%	70-135	05.14.19 20.12	

Certificate of Analytical Results 624025

LT Environmental, Inc., Arvada, CO

MuyWayno Pond

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624025-001	Date Collected:	05.09.19 11.30	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.15.19 15.15	Basis:	Wet Weight
Seq Number:	3089157				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.15.19 19.23	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.15.19 19.23	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.15.19 19.23	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.15.19 19.23	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.15.19 19.23	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.15.19 19.23	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.15.19 19.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	05.15.19 19.23	
1,4-Difluorobenzene	540-36-3	102	%	70-130	05.15.19 19.23	

Certificate of Analytical Results 624025

LT Environmental, Inc., Arvada, CO

MuyWayno Pond

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624025-002	Date Collected:	05.09.19 11.35	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.14.19 11.40	Basis:	Wet Weight
Seq Number:	3089035				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**152**	5.01	mg/kg	05.14.19 13.45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.14.19 10.00	Basis:	Wet Weight
Seq Number:	3089069				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 20.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 20.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 20.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 20.32	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.14.19 20.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	05.14.19 20.32	
o-Terphenyl	84-15-1	104	%	70-135	05.14.19 20.32	

Certificate of Analytical Results 624025

LT Environmental, Inc., Arvada, CO

MuyWayno Pond

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624025-002	Date Collected:	05.09.19 11.35	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.15.19 15.15	Basis:	Wet Weight
Seq Number:	3089157				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.15.19 19.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.15.19 19.42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.15.19 19.42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.15.19 19.42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.15.19 19.42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.15.19 19.42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.15.19 19.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	05.15.19 19.42	
4-Bromofluorobenzene	460-00-4	102	%	70-130	05.15.19 19.42	

Certificate of Analytical Results 624025

LT Environmental, Inc., Arvada, CO

MuyWayno Pond

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624025-003	Date Collected:	05.09.19 11.40	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.14.19 11.40	Basis:	Wet Weight
Seq Number:	3089035				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1360**	5.04	mg/kg	05.14.19 13.52		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.14.19 10.00	Basis:	Wet Weight
Seq Number:	3089069				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 20.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 20.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 20.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 20.52	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.14.19 20.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.14.19 20.52	
o-Terphenyl	84-15-1	101	%	70-135	05.14.19 20.52	

Certificate of Analytical Results 624025

LT Environmental, Inc., Arvada, CO

MuyWayno Pond

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624025-003	Date Collected:	05.09.19 11.40	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.15.19 15.15	Basis:	Wet Weight
Seq Number:	3089157				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.15.19 20.01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.15.19 20.01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.15.19 20.01	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.15.19 20.01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.15.19 20.01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.15.19 20.01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.15.19 20.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	05.15.19 20.01	
4-Bromofluorobenzene	460-00-4	103	%	70-130	05.15.19 20.01	

Certificate of Analytical Results 624025

LT Environmental, Inc., Arvada, CO

MuyWayno Pond

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624025-004	Date Collected:	05.09.19 11.50	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.14.19 11.40	Basis:	Wet Weight
Seq Number:	3089035				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**232**	25.1	mg/kg	05.14.19 14.00		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.14.19 10.00	Basis:	Wet Weight
Seq Number:	3089069				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 21.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 21.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 21.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 21.11	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.14.19 21.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.14.19 21.11	
o-Terphenyl	84-15-1	103	%	70-135	05.14.19 21.11	

Certificate of Analytical Results 624025

LT Environmental, Inc., Arvada, CO

MuyWayno Pond

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624025-004	Date Collected:	05.09.19 11.50	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.15.19 15.15	Basis:	Wet Weight
Seq Number:	3089157				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.15.19 20.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.15.19 20.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.15.19 20.20	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.15.19 20.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.15.19 20.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.15.19 20.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.15.19 20.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	70-130	05.15.19 20.20	
1,4-Difluorobenzene	540-36-3	102	%	70-130	05.15.19 20.20	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 624025

LT Environmental, Inc.

MuyWayno Pond

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089035 Matrix: Solid Date Prep: 05.14.19
MB Sample Id: 7677803-1-BLK LCS Sample Id: 7677803-1-BKS LCSD Sample Id: 7677803-1-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	254	102	254	102	90-110	0	20	mg/kg	05.14.19 12:03	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089035 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 624024-005 MS Sample Id: 624024-005 S MSD Sample Id: 624024-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	52.9	251	304	100	302	99	90-110	1	20	mg/kg	05.14.19 12:25	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089035 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 624025-004 MS Sample Id: 624025-004 S MSD Sample Id: 624025-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	232	251	479	98	481	99	90-110	0	20	mg/kg	05.14.19 14:07	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3089069 Matrix: Solid Date Prep: 05.14.19
MB Sample Id: 7677880-1-BLK LCS Sample Id: 7677880-1-BKS LCSD Sample Id: 7677880-1-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	1080	108	1050	105	70-135	3	20	mg/kg	05.14.19 12:54	
Diesel Range Organics (DRO)	<8.13	1000	1050	105	1030	103	70-135	2	20	mg/kg	05.14.19 12:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		126		116		70-135	%	05.14.19 12:54
o-Terphenyl	102		111		105		70-135	%	05.14.19 12:54

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 624025

LT Environmental, Inc.

MuyWayno Pond

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3089069 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 624176-001 MS Sample Id: 624176-001 S MSD Sample Id: 624176-001 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)	12.8	998	1170	116	1180	117	70-135	1	20	mg/kg	05.14.19 13:54	
Diesel Range Organics (DRO)	1090	998	1930	84	1930	84	70-135	0	20	mg/kg	05.14.19 13:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		120		70-135	%	05.14.19 13:54
o-Terphenyl	120		122		70-135	%	05.14.19 13:54

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3089157 Matrix: Solid Date Prep: 05.15.19
MB Sample Id: 7677944-1-BLK LCS Sample Id: 7677944-1-BKS LCSD Sample Id: 7677944-1-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	0.114	114	0.119	119	70-130	4	35	mg/kg	05.15.19 15:44	
Toluene	<0.000454	0.0996	0.106	106	0.111	111	70-130	5	35	mg/kg	05.15.19 15:44	
Ethylbenzene	<0.000563	0.0996	0.113	113	0.117	117	70-130	3	35	mg/kg	05.15.19 15:44	
m,p-Xylenes	<0.00101	0.199	0.234	118	0.243	122	70-130	4	35	mg/kg	05.15.19 15:44	
o-Xylene	<0.000343	0.0996	0.112	112	0.117	117	70-130	4	35	mg/kg	05.15.19 15:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		101		103		70-130	%	05.15.19 15:44
4-Bromofluorobenzene	83		94		99		70-130	%	05.15.19 15:44

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3089157 Matrix: Soil Date Prep: 05.15.19
Parent Sample Id: 624024-007 MS Sample Id: 624024-007 S MSD Sample Id: 624024-007 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	0.0938	94	0.0671	68	70-130	33	35	mg/kg	05.15.19 16:29	X
Toluene	0.000473	0.100	0.0805	80	0.0704	70	70-130	13	35	mg/kg	05.15.19 16:29	
Ethylbenzene	<0.000567	0.100	0.0747	75	0.0729	73	70-130	2	35	mg/kg	05.15.19 16:29	
m,p-Xylenes	<0.00102	0.201	0.151	75	0.146	73	70-130	3	35	mg/kg	05.15.19 16:29	
o-Xylene	0.000594	0.100	0.0730	72	0.0733	73	70-130	0	35	mg/kg	05.15.19 16:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		97		70-130	%	05.15.19 16:29
4-Bromofluorobenzene	92		101		70-130	%	05.15.19 16:29

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) www.xenco.com

Work Order No: 624075

Page 1 of 1

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

Work Order Comments

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

Project Name:	Muy Wayno Pond	Turn Around	
Project Number:		Routine	☑
P.O. Number:	Spill Date - 4/15/19	Rush:	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.5 | 0.4	Thermometer ID	T2C
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 0=8021)	Chloride (EPA 300.0)
SS01	S	05/09/19	1130	.5'	1	X	X	X
SS02	S		1135		1			
SS03	S		1140		1			
SS04	S		1150		1			

Work Order Notes

32.1489740,
-103.9220659

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		05/10/2019 13:00	2		05/10/2019 13:30
3			4		5/13/19 1050
5			6		

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: 05/13/2019 10:50:00 AM

Work Order #: 624025

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 05/13/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/13/2019
Jessica Kramer

Analytical Report 629976

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond (2RP-5408)

012919080

11-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

11-JUL-19

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

Reference: XENCO Report No(s): **629976**
Muy Wayno Frac Pond (2RP-5408)
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 629976. 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. 629976 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 629976

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5408)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	07-02-19 16:00	1 ft	629976-001
FS02	S	07-02-19 16:10	1 ft	629976-002
SW01	S	07-02-19 16:20	0 - 1 ft	629976-003
SW02	S	07-02-19 16:30	0 - 1 ft	629976-004

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3094952 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected
Samples affected are: 629976-001.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 629976

LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond (2RP-5408)

Project Id: 012919080
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jul-03-19 03:10 pm
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	629976-001		629976-002		629976-003		629976-004					
	Field Id:	FS01		FS02		SW01		SW02					
	Depth:	1- ft		1- ft		0-1 ft		0-1 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jul-02-19 16:00		Jul-02-19 16:10		Jul-02-19 16:20		Jul-02-19 16:30					
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-09-19 11:15		Jul-09-19 11:15		Jul-09-19 11:15		Jul-09-19 11:15					
	Analyzed:	Jul-10-19 06:57		Jul-10-19 07:21		Jul-10-19 07:44		Jul-10-19 08:07					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Toluene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
m,p-Xylenes		<0.00402	0.00402	<0.00399	0.00399	<0.00398	0.00398	<0.00401	0.00401				
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Total BTEX		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-05-19 12:00		Jul-05-19 12:00		Jul-05-19 12:00		Jul-05-19 12:00					
	Analyzed:	Jul-06-19 03:36		Jul-06-19 03:44		Jul-06-19 03:51		Jul-06-19 03:58					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		26.2	4.95	62.3	4.95	144	4.95	11.5	5.04				
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-05-19 14:00		Jul-05-19 14:00		Jul-05-19 14:00		Jul-05-19 14:00					
	Analyzed:	Jul-06-19 04:50		Jul-06-19 05:15		Jul-06-19 05:39		Jul-06-19 06:03					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 629976

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5408)

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629976-001	Date Collected:	07.02.19 16.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.05.19 12.00	Basis:	Wet Weight
Seq Number:	3094583			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.2**	4.95	mg/kg	07.06.19 03.36		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 14.00	Basis:	Wet Weight
Seq Number:	3094605			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.06.19 04.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.06.19 04.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.06.19 04.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.06.19 04.50	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.06.19 04.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	07.06.19 04.50	
o-Terphenyl	84-15-1	94	%	70-135	07.06.19 04.50	

Certificate of Analytical Results 629976

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5408)

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629976-001	Date Collected:	07.02.19 16.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.10.19 06.57	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.10.19 06.57	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.10.19 06.57	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.10.19 06.57	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.10.19 06.57	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.10.19 06.57	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.10.19 06.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	153	%	70-130	07.10.19 06.57	**
1,4-Difluorobenzene	540-36-3	77	%	70-130	07.10.19 06.57	

Certificate of Analytical Results 629976

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5408)

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629976-002	Date Collected:	07.02.19 16.10	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.05.19 12.00	Basis:	Wet Weight
Seq Number:	3094583			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**62.3**	4.95	mg/kg	07.06.19 03.44		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 14.00	Basis:	Wet Weight
Seq Number:	3094605			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.06.19 05.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.06.19 05.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.06.19 05.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.06.19 05.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.06.19 05.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	07.06.19 05.15	
o-Terphenyl	84-15-1	102	%	70-135	07.06.19 05.15	

Certificate of Analytical Results 629976

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5408)

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629976-002	Date Collected:	07.02.19 16.10	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 07.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 07.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 07.21	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.10.19 07.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 07.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 07.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 07.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	86	%	70-130	07.10.19 07.21	
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.10.19 07.21	

Certificate of Analytical Results 629976

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5408)

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629976-003	Date Collected:	07.02.19 16.20	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.05.19 12.00	Basis:	Wet Weight
Seq Number:	3094583			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**144**	4.95	mg/kg	07.06.19 03.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 14.00	Basis:	Wet Weight
Seq Number:	3094605			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.06.19 05.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.06.19 05.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.06.19 05.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.06.19 05.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.06.19 05.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	07.06.19 05.39	
o-Terphenyl	84-15-1	108	%	70-135	07.06.19 05.39	

Certificate of Analytical Results 629976

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5408)

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629976-003	Date Collected:	07.02.19 16.20	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.10.19 07.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.10.19 07.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.10.19 07.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.10.19 07.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.10.19 07.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.10.19 07.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.10.19 07.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	89	%	70-130	07.10.19 07.44	
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.10.19 07.44	

Certificate of Analytical Results 629976

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5408)

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629976-004	Date Collected:	07.02.19 16.30	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.05.19 12.00	Basis:	Wet Weight
Seq Number:	3094583			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.5**	5.04	mg/kg	07.06.19 03.58		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 14.00	Basis:	Wet Weight
Seq Number:	3094605			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.06.19 06.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.06.19 06.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.06.19 06.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.06.19 06.03	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.06.19 06.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	07.06.19 06.03	
o-Terphenyl	84-15-1	102	%	70-135	07.06.19 06.03	

Certificate of Analytical Results 629976

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5408)

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629976-004	Date Collected:	07.02.19 16.30	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 08.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 08.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 08.07	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.10.19 08.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 08.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 08.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 08.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	07.10.19 08.07	
1,4-Difluorobenzene	540-36-3	89	%	70-130	07.10.19 08.07	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 629976

LT Environmental, Inc.

Muy Wayno Frac Pond (2RP-5408)

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094583 Matrix: Solid Date Prep: 07.05.19
MB Sample Id: 7681419-1-BLK LCS Sample Id: 7681419-1-BKS LCSD Sample Id: 7681419-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	262	105	262	105	90-110	0	20	mg/kg	07.06.19 00:28	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094583 Matrix: Soil Date Prep: 07.05.19
Parent Sample Id: 629977-001 MS Sample Id: 629977-001 S MSD Sample Id: 629977-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	194	252	443	99	443	99	90-110	0	20	mg/kg	07.06.19 00:50	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094583 Matrix: Soil Date Prep: 07.05.19
Parent Sample Id: 629979-010 MS Sample Id: 629979-010 S MSD Sample Id: 629979-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	47.2	253	308	103	308	103	90-110	0	20	mg/kg	07.06.19 02:31	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094605 Matrix: Solid Date Prep: 07.05.19
MB Sample Id: 7681479-1-BLK LCS Sample Id: 7681479-1-BKS LCSD Sample Id: 7681479-1-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	1140	114	1090	109	70-135	4	20	mg/kg	07.05.19 20:48	
Diesel Range Organics (DRO)	<8.13	1000	1170	117	1150	115	70-135	2	20	mg/kg	07.05.19 20:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		95		89		70-135	%	07.05.19 20:48
o-Terphenyl	101		89		81		70-135	%	07.05.19 20:48

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 629976

LT Environmental, Inc.

Muy Wayno Frac Pond (2RP-5408)

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094605 Matrix: Soil Date Prep: 07.05.19
Parent Sample Id: 629979-001 MS Sample Id: 629979-001 S MSD Sample Id: 629979-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	10.3	996	1180	117	1180	117	70-135	0	20	mg/kg	07.05.19 22:01	
Diesel Range Organics (DRO)	12.3	996	1120	111	1190	118	70-135	6	20	mg/kg	07.05.19 22:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		105		70-135	%	07.05.19 22:01
o-Terphenyl	101		92		70-135	%	07.05.19 22:01

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094952 Matrix: Solid Date Prep: 07.09.19
MB Sample Id: 7681643-1-BLK LCS Sample Id: 7681643-1-BKS LCSD Sample Id: 7681643-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0812	81	0.0870	87	70-130	7	35	mg/kg	07.09.19 23:17	
Toluene	<0.000456	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	07.09.19 23:17	
Ethylbenzene	<0.00200	0.100	0.116	116	0.120	120	70-130	3	35	mg/kg	07.09.19 23:17	
m,p-Xylenes	<0.00101	0.200	0.231	116	0.241	121	70-130	4	35	mg/kg	07.09.19 23:17	
o-Xylene	0.000359	0.100	0.109	109	0.114	114	70-130	4	35	mg/kg	07.09.19 23:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		87		88		70-130	%	07.09.19 23:17
4-Bromofluorobenzene	107		109		107		70-130	%	07.09.19 23:17

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094952 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 629723-003 MS Sample Id: 629723-003 S MSD Sample Id: 629723-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0729	73	0.0768	77	70-130	5	35	mg/kg	07.10.19 00:03	
Toluene	0.000780	0.100	0.0881	87	0.0928	92	70-130	5	35	mg/kg	07.10.19 00:03	
Ethylbenzene	<0.000566	0.100	0.0953	95	0.101	101	70-130	6	35	mg/kg	07.10.19 00:03	
m,p-Xylenes	0.00262	0.200	0.190	94	0.202	99	70-130	6	35	mg/kg	07.10.19 00:03	
o-Xylene	0.00101	0.100	0.0913	90	0.0967	96	70-130	6	35	mg/kg	07.10.19 00:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		90		70-130	%	07.10.19 00:03
4-Bromofluorobenzene	110		111		70-130	%	07.10.19 00:03

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

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 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

Work Order No: 629976 ~~629973~~ 7/3/19

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc.	Company Name:	XTO
Address:	3300 North A. Street	Address:	3104 E. Green Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432. 236. 3849	Email:	slo@ltenv.com

Work Order Comments

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

Project Name:	Mud Wayne Flat Pond (2RP-5402)	Turn Around	
Project Number:	012919080	Routine	☑
Project Location		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	
PO #:		Quote #:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	7.6	Thermometer ID	TNM007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	4

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Pres. Code	TPH (EPA 8011)	BTEX (EPA 8021)	Chloride (EPA 300)
	FS01	S	7/2/19	1600	1'	1		X	X	X
	FS02	S	7/2/19	1610	1'	1		X	X	X
	SW01	S	7/2/19	1620	0-1'	1		X	X	X
	SW02	S	7/2/19	1630	0-1'	1		X	X	X

ANALYSIS REQUEST

Preservative Codes

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

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		7/3/19 15:10	2		
3			4		
5			6		

Revised Date 022619 Rev. 2019.1

Inter-Office Shipment

IOS Number **42817**

Date/Time: 07/03/19 16:41
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 775636672857

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
629976-001	S	FS01	07/02/19 16:00	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
629976-001	S	FS01	07/02/19 16:00	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
629976-001	S	FS01	07/02/19 16:00	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
629976-002	S	FS02	07/02/19 16:10	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
629976-002	S	FS02	07/02/19 16:10	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
629976-002	S	FS02	07/02/19 16:10	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
629976-003	S	SW01	07/02/19 16:20	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
629976-003	S	SW01	07/02/19 16:20	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
629976-003	S	SW01	07/02/19 16:20	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
629976-004	S	SW02	07/02/19 16:30	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
629976-004	S	SW02	07/02/19 16:30	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
629976-004	S	SW02	07/02/19 16:30	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 07/03/2019

Received By: Brianna Teel

Date Received: 07/05/2019 10:45

Cooler Temperature: 5.8

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 42817

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 07/03/2019 04:41 PM

Received By: Brianna Teel **Date Received:** 07/05/2019 10:45 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Brianna Teel Date: 07/05/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/03/2019 03:10:00 PM

Work Order #: 629976

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	7.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	Chilling in Progress.
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 Custody Seals intact on sample bottles?	**No**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Subbed to Xenco Midland.
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 07/03/2019

Checklist reviewed by: Jessica Kramer Date: 07/09/2019

Analytical Report 629972

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond (2RP-5402)

012919080

11-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

11-JUL-19

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

Reference: XENCO Report No(s): **629972**
Muy Wayno Frac Pond (2RP-5402)
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 629972. 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. 629972 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 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS02 A	S	07-03-19 12:00	9 In	629972-001
SS03 A	S	07-03-19 12:20	9 In	629972-002
SS04 A	S	07-03-19 12:40	12 In	629972-003
SS05	S	07-03-19 13:00	6 In	629972-004
SS05 A	S	07-03-19 13:20	9 In	629972-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond (2RP-5402)

Project ID: *012919080*
Work Order Number(s): *629972*

Report Date: *11-JUL-19*
Date Received: *07/03/2019*

Sample receipt non conformances and comments:

CORRECTED SAMPLE DEPTHS TO INCHES. NEW VERSION GENERATED

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3094952 BTEX by EPA 8021B

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

Certificate of Analysis Summary 629972

LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond (2RP-5402)

Project Id: 012919080
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jul-03-19 03:10 pm
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested																
	Lab Id:	629972-001		629972-002		629972-003		629972-004		629972-005						
	Field Id:	SS02 A		SS03 A		SS04 A		SS05		SS05 A						
	Depth:	9- In		9- In		12- In		6- In		9- In						
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL						
	Sampled:	Jul-03-19 12:00		Jul-03-19 12:20		Jul-03-19 12:40		Jul-03-19 13:00		Jul-03-19 13:20						
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-09-19 11:15		Jul-09-19 11:15		Jul-09-19 11:15		Jul-09-19 11:15		Jul-09-19 11:15						
	Analyzed:	Jul-10-19 12:36		Jul-10-19 04:02		Jul-10-19 12:59		Jul-10-19 04:48		Jul-10-19 05:11						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL					
Benzene		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200					
Toluene		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200					
Ethylbenzene		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200					
m,p-Xylenes		<0.00398	0.00398	<0.00402	0.00402	<0.00398	0.00398	<0.00399	0.00399	<0.00401	0.00401					
o-Xylene		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200					
Total Xylenes		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200					
Total BTEX		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200					
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-05-19 12:00		Jul-05-19 12:00		Jul-05-19 12:00		Jul-05-19 12:00		Jul-05-19 12:00						
	Analyzed:	Jul-06-19 02:46		Jul-06-19 02:53		Jul-06-19 03:15		Jul-06-19 03:22		Jul-06-19 03:29						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL					
Chloride		31.6	4.95	67.5	4.99	399	5.04	40.5	5.02	26.6	5.00					
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-05-19 14:00		Jul-05-19 14:00		Jul-05-19 14:00		Jul-05-19 14:00		Jul-05-19 14:00						
	Analyzed:	Jul-06-19 02:50		Jul-06-19 03:14		Jul-06-19 03:38		Jul-06-19 04:02		Jul-06-19 04:26						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL					
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0					
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0					
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0					
Total TPH		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0					
Total GRO-DRO		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0					

Jessica Kramer
Project Assistant

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS02 A**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-001	Date Collected:	07.03.19 12.00	Sample Depth:	9 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.05.19 12.00	Basis:	Wet Weight
Seq Number:	3094583			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**31.6**	4.95	mg/kg	07.06.19 02.46		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 14.00	Basis:	Wet Weight
Seq Number:	3094605			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.06.19 02.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.06.19 02.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.06.19 02.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.06.19 02.50	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.06.19 02.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	07.06.19 02.50	
o-Terphenyl	84-15-1	97	%	70-135	07.06.19 02.50	

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS02 A**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-001	Date Collected:	07.03.19 12.00	Sample Depth:	9 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.10.19 12.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.10.19 12.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.10.19 12.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.10.19 12.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.10.19 12.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.10.19 12.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.10.19 12.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	70-130	07.10.19 12.36	
4-Bromofluorobenzene	460-00-4	105	%	70-130	07.10.19 12.36	

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS03 A**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-002	Date Collected:	07.03.19 12.20	Sample Depth:	9 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.05.19 12.00	Basis:	Wet Weight
Seq Number:	3094583			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**67.5**	4.99	mg/kg	07.06.19 02.53		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 14.00	Basis:	Wet Weight
Seq Number:	3094605			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.06.19 03.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.06.19 03.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.06.19 03.14	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.06.19 03.14	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.06.19 03.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	07.06.19 03.14	
o-Terphenyl	84-15-1	88	%	70-135	07.06.19 03.14	

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS03 A**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-002	Date Collected:	07.03.19 12.20	Sample Depth:	9 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.10.19 04.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.10.19 04.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.10.19 04.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.10.19 04.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.10.19 04.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.10.19 04.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.10.19 04.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	07.10.19 04.02	
1,4-Difluorobenzene	540-36-3	86	%	70-130	07.10.19 04.02	

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS04 A**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-003	Date Collected:	07.03.19 12.40	Sample Depth:	12 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.05.19 12.00	Basis:	Wet Weight
Seq Number:	3094583			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**399**	5.04	mg/kg	07.06.19 03.15		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 14.00	Basis:	Wet Weight
Seq Number:	3094605			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.06.19 03.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.06.19 03.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.06.19 03.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.06.19 03.38	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.06.19 03.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	07.06.19 03.38	
o-Terphenyl	84-15-1	86	%	70-135	07.06.19 03.38	

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS04 A**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-003	Date Collected:	07.03.19 12.40	Sample Depth:	12 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.10.19 12.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.10.19 12.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.10.19 12.59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.10.19 12.59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.10.19 12.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.10.19 12.59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.10.19 12.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	07.10.19 12.59	
1,4-Difluorobenzene	540-36-3	91	%	70-130	07.10.19 12.59	

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-004	Date Collected:	07.03.19 13.00	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.05.19 12.00	Basis:	Wet Weight
Seq Number:	3094583			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**40.5**	5.02	mg/kg	07.06.19 03.22		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 14.00	Basis:	Wet Weight
Seq Number:	3094605			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.06.19 04.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.06.19 04.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.06.19 04.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.06.19 04.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.06.19 04.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	07.06.19 04.02	
o-Terphenyl	84-15-1	93	%	70-135	07.06.19 04.02	

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-004	Date Collected:	07.03.19 13.00	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 04.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 04.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 04.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.10.19 04.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 04.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 04.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 04.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.10.19 04.48	
1,4-Difluorobenzene	540-36-3	87	%	70-130	07.10.19 04.48	

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS05 A**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-005	Date Collected:	07.03.19 13.20	Sample Depth:	9 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.05.19 12.00	Basis:	Wet Weight
Seq Number:	3094583			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.6**	5.00	mg/kg	07.06.19 03.29		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 14.00	Basis:	Wet Weight
Seq Number:	3094605			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.06.19 04.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.06.19 04.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.06.19 04.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.06.19 04.26	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.06.19 04.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	07.06.19 04.26	
o-Terphenyl	84-15-1	103	%	70-135	07.06.19 04.26	

Certificate of Analytical Results 629972

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond (2RP-5402)

Sample Id:	**SS05 A**	Matrix:	Soil	Date Received:	07.03.19 15.10
Lab Sample Id:	629972-005	Date Collected:	07.03.19 13.20	Sample Depth:	9 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 05.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 05.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 05.11	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.10.19 05.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 05.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 05.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 05.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.10.19 05.11	
1,4-Difluorobenzene	540-36-3	86	%	70-130	07.10.19 05.11	

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 629972

LT Environmental, Inc.

Muy Wayno Frac Pond (2RP-5402)

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094583 Matrix: Solid Date Prep: 07.05.19
MB Sample Id: 7681419-1-BLK LCS Sample Id: 7681419-1-BKS LCSD Sample Id: 7681419-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	262	105	262	105	90-110	0	20	mg/kg	07.06.19 00:28	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094583 Matrix: Soil Date Prep: 07.05.19
Parent Sample Id: 629977-001 MS Sample Id: 629977-001 S MSD Sample Id: 629977-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	194	252	443	99	443	99	90-110	0	20	mg/kg	07.06.19 00:50	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094583 Matrix: Soil Date Prep: 07.05.19
Parent Sample Id: 629979-010 MS Sample Id: 629979-010 S MSD Sample Id: 629979-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	47.2	253	308	103	308	103	90-110	0	20	mg/kg	07.06.19 02:31	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094605 Matrix: Solid Date Prep: 07.05.19
MB Sample Id: 7681479-1-BLK LCS Sample Id: 7681479-1-BKS LCSD Sample Id: 7681479-1-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	1140	114	1090	109	70-135	4	20	mg/kg	07.05.19 20:48	
Diesel Range Organics (DRO)	<8.13	1000	1170	117	1150	115	70-135	2	20	mg/kg	07.05.19 20:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		95		89		70-135	%	07.05.19 20:48
o-Terphenyl	101		89		81		70-135	%	07.05.19 20:48

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 629972

LT Environmental, Inc.

Muy Wayno Frac Pond (2RP-5402)

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094605 Matrix: Soil Date Prep: 07.05.19
Parent Sample Id: 629979-001 MS Sample Id: 629979-001 S MSD Sample Id: 629979-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	10.3	996	1180	117	1180	117	70-135	0	20	mg/kg	07.05.19 22:01	
Diesel Range Organics (DRO)	12.3	996	1120	111	1190	118	70-135	6	20	mg/kg	07.05.19 22:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		105		70-135	%	07.05.19 22:01
o-Terphenyl	101		92		70-135	%	07.05.19 22:01

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094952 Matrix: Solid Date Prep: 07.09.19
MB Sample Id: 7681643-1-BLK LCS Sample Id: 7681643-1-BKS LCSD Sample Id: 7681643-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0812	81	0.0870	87	70-130	7	35	mg/kg	07.09.19 23:17	
Toluene	<0.000456	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	07.09.19 23:17	
Ethylbenzene	<0.00200	0.100	0.116	116	0.120	120	70-130	3	35	mg/kg	07.09.19 23:17	
m,p-Xylenes	<0.00101	0.200	0.231	116	0.241	121	70-130	4	35	mg/kg	07.09.19 23:17	
o-Xylene	0.000359	0.100	0.109	109	0.114	114	70-130	4	35	mg/kg	07.09.19 23:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		87		88		70-130	%	07.09.19 23:17
4-Bromofluorobenzene	107		109		107		70-130	%	07.09.19 23:17

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094952 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 629723-003 MS Sample Id: 629723-003 S MSD Sample Id: 629723-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0729	73	0.0768	77	70-130	5	35	mg/kg	07.10.19 00:03	
Toluene	0.000780	0.100	0.0881	87	0.0928	92	70-130	5	35	mg/kg	07.10.19 00:03	
Ethylbenzene	<0.000566	0.100	0.0953	95	0.101	101	70-130	6	35	mg/kg	07.10.19 00:03	
m,p-Xylenes	0.00262	0.200	0.190	94	0.202	99	70-130	6	35	mg/kg	07.10.19 00:03	
o-Xylene	0.00101	0.100	0.0913	90	0.0967	96	70-130	6	35	mg/kg	07.10.19 00:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		90		70-130	%	07.10.19 00:03
4-Bromofluorobenzene	110		111		70-130	%	07.10.19 00:03

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

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 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

Work Order No: 629972

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc.	Company Name:	XTO
Address:	3300 North A. Street	Address:	3104 E. Green Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad, NM, 88220
Phone:	432. 236. 3849	Email:	Slo@Henv.com

Work Order Comments

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

Project Name:	Muy Wayno Frac Pond (22P-5702)	Turn Around	
Project Number:	012919080	Routine	☒
Project Location		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	
PO #:		Quote #:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	Yes No
Temperature (°C):	7.0	Thermometer ID	
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Pres. Code	TPH (EPA 8012)	BTEX (EPA 8021)	Chloride (EPA 300)
	SS02 A	S	7/3/19	1200	9"	1		X	X	X
	SS03 A	S	7/3/19	1220	9"	1		X	X	X
	SS04 A	S	7/3/19	1240	12"	1		X	X	X
	SS05	S	7/3/19	1300	6"	1		X	X	X
	SS05A	S	7/3/19	1320	9"	1		X	X	X

ANALYSIS REQUEST

Preservative Codes

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

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	Spencer Lo	Cook	7/3/19 15:10	2		
3				4		
5				6		

Revised Date 022619 Rev. 2019.1

1.001

Inter-Office Shipment

IOS Number **42815**

Date/Time: 07/03/19 16:30
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 775636672857

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
629972-001	S	SS02 A	07/03/19 12:00	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
629972-001	S	SS02 A	07/03/19 12:00	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
629972-001	S	SS02 A	07/03/19 12:00	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
629972-002	S	SS03 A	07/03/19 12:20	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
629972-002	S	SS03 A	07/03/19 12:20	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
629972-002	S	SS03 A	07/03/19 12:20	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
629972-003	S	SS04 A	07/03/19 12:40	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
629972-003	S	SS04 A	07/03/19 12:40	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
629972-003	S	SS04 A	07/03/19 12:40	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
629972-004	S	SS05	07/03/19 13:00	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
629972-004	S	SS05	07/03/19 13:00	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
629972-004	S	SS05	07/03/19 13:00	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
629972-005	S	SS05 A	07/03/19 13:20	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
629972-005	S	SS05 A	07/03/19 13:20	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
629972-005	S	SS05 A	07/03/19 13:20	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 07/03/2019

Received By: Brianna Teel

Date Received: 07/05/2019 10:45

Cooler Temperature: 5.8

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 42815

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 07/03/2019 04:30 PM

Received By: Brianna Teel **Date Received:** 07/05/2019 10:45 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Brianna Teel Date: 07/05/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/03/2019 03:10:00 PM

Work Order #: 629972

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	7.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	Chilling in progress.
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 Custody Seals intact on sample bottles?	**No**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**Yes**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Subbed to Xenco Midland.
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 07/03/2019

Checklist reviewed by: Jessica Kramer Date: 07/09/2019