

December 31, 2018

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

**RE: Closure Request
Remuda South 25 State #101H
Remediation Permit Numbers 2RP-5025 and 2RP-5028
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following letter report detailing confirmation soil sampling activities at the Remuda South 25 State #101H (API 30-015-44364) (Site) in Unit E, Section 25, Township 23 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling activities was to address impacts to soil after two events caused the release of drilling fluids into a lined containment area and onto the well pad.

On October 4, 2018, while circulating drilling fluids, a frac tank overflowed releasing approximately 6 barrels (bbls) of calcium carbonate fluid into the impervious lined containment and 1 bbl on the pad surface. Five bbls were recovered from the containment area; no fluids were recovered from the pad. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on October 19, 2018 and was assigned Remediation Permit Number (RP) Number 2RP-5025 (Attachment 1).

On October 8, 2018, while transferring drilling mud from one frac tank to another, a valve was accidentally left open releasing 414 bbls of water-based drilling mud into the lined containment. The containment failed allowing mud to flow onto the drilling pad. Approximately 214 bbls of drilling mud were recovered from the containment area and well pad. XTO reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 on October 23, 2018 and was assigned RP Number 2RP-5028 (Attachment 1).

BACKGROUND

The source of the releases is at latitude 32.276934 degrees (°) and longitude -103.944746°. Both releases occurred after August 14, 2018; therefore, LTE applied Table 1: *The 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 88 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted



water well with depth to water data is C 02707, located approximately 2.4 miles west of the Site. Ground surface elevation at the water well location is 2,993 feet, 70 feet lower in elevation than the Site. The water well has a depth to groundwater of 18 feet bgs and a total depth of 40 feet bgs. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 662 feet northeast 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 from a fresh water well or spring and is not within a 100-year floodplain or overlying a subsurface mine.

Based on these criteria, the following remediation action levels apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX); 1,000 mg/kg gasoline range organics (GRO) and diesel range organics (DRO); 2,500 mg/kg total petroleum hydrocarbons (TPH); and 10,000 mg/kg chloride.

SOIL SAMPLING

On December 6, 2018, and December 7, 2018, an LTE scientist advanced 5 soil borings within the release areas using a hand auger. Two soil samples were collected from each soil boring to assess the lateral and vertical extent of potentially impacted soil within the release areas. The soil sample locations were selected based on information provided on the initial Form C-141 and from field observations. The soil sample locations are depicted on Figure 2. It should be noted that the aerial photograph in Figure 2 is not a current representation of the Site. A well pad exists at the location and the release was contained on the well pad. No fluids flowed off pad into undeveloped pasture. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, the soil samples were collected at approximately 0.5 feet bgs and 1 foot bgs (Table 1). Soil borings were backfilled with the soil removed from each borehole. No soil was removed from the Site for disposal. No excavation activities were conducted as part of this investigation.

The soil samples were screened for volatile aromatic hydrocarbons using a photo-ionization detector (PID) equipped with a 10.6 electron volt lamp. The soil samples were placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis, and immediately placed on ice. The samples were shipped to Xenco Laboratories (Xenco) in Midland, Texas, at 4 degrees Celsius (°C) under strict chain-of-custody procedures for analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-Oil Range Organics (ORO) by EPA Method 8015 Modified, and chloride by EPA Method 300.0.

ANALYTICAL RESULTS

Laboratory analytical results for the preliminary soil samples indicate compliance with the NMOCD site-specific remediation action levels for BTEX, DRO/GRO, TPH, and chloride. The





laboratory analytical results are depicted on Figure 2, summarized in Table 1, and the laboratory report is included in Attachment 2.

CONCLUSIONS

Laboratory analytical results for the 10 soil samples indicate that BTEX, DRO/GRO, TPH, and chloride concentrations are compliant with NMOCD site-specific remediation action levels and no remediation is required for the releases that occurred on a new well pad. XTO requests no further action for both release numbers 2RP-5025 and 2RP-5028. Updated NMOCD Form C-141 for each release are included in Attachment 1. Site photographs are included in Attachment 3.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Adrian Baker
Project Geologist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Ryan Mann, State Land Office
Shelly Tucker, BLM

Attachments:

Figure 1 Site Location Map
Figure 2 Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-5025 and 2RP-5028)
Attachment 2 Laboratory Analytical Reports
Attachment 3 Photo Log
Attachment 4 Soil Boring Logs



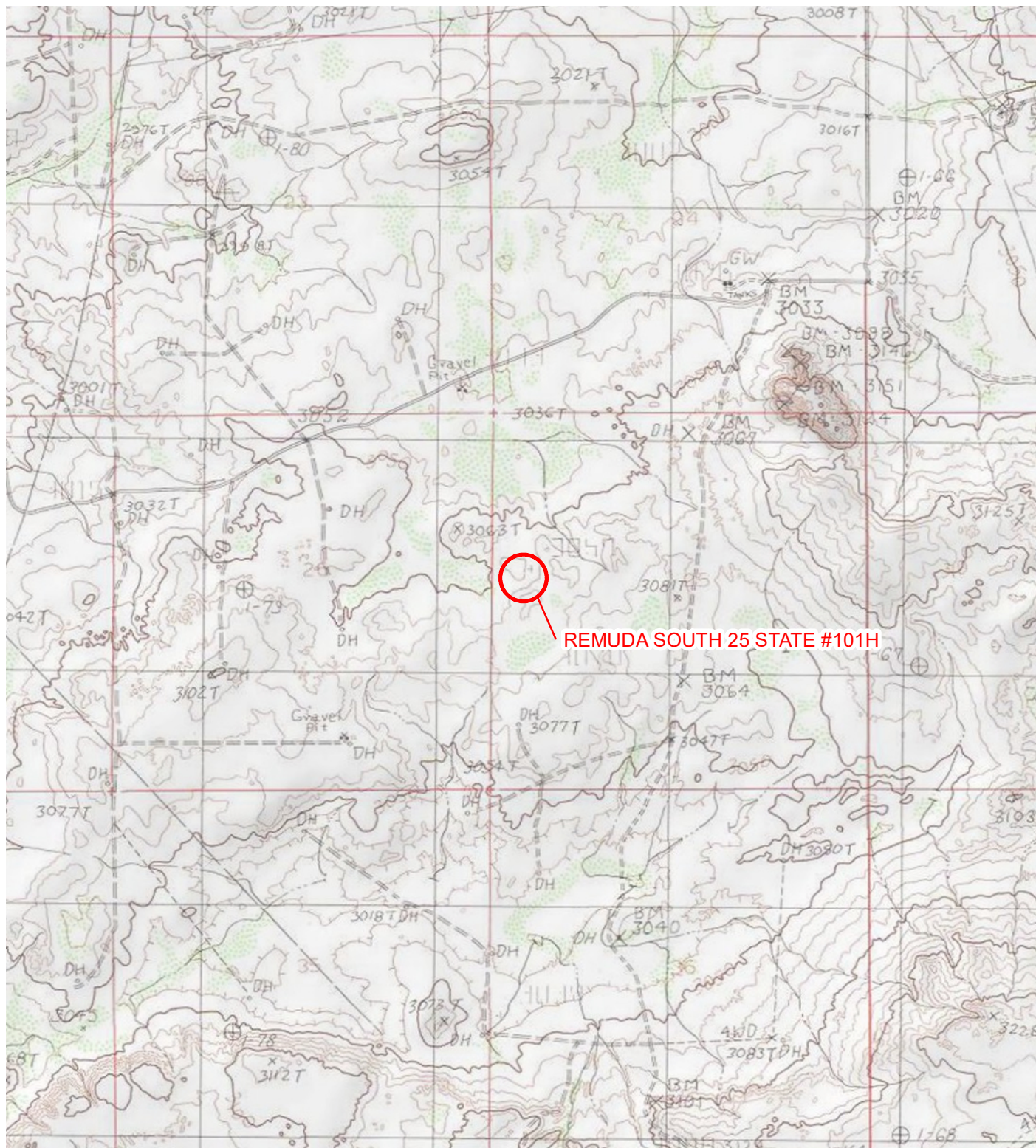
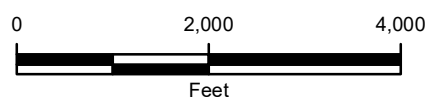


IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION

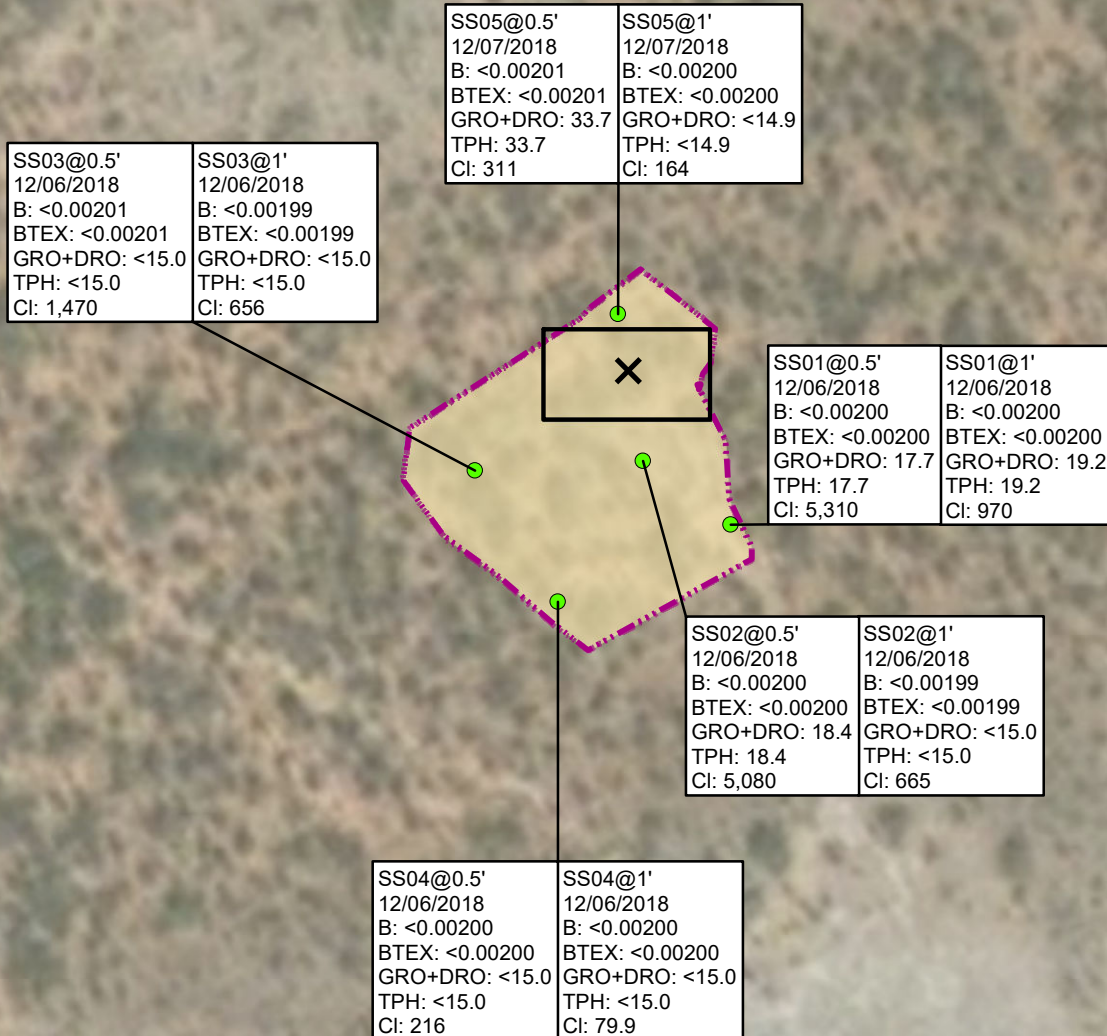


NOTE: REMEDIATION PERMIT
NUMBERS 2RP-5025 & 2RP-5028

FIGURE 1
SITE LOCATION MAP
REMUDA SOUTH 25 STATE #101H
UNIT E SEC 25 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE
 SAMPLE DATE
 B: BENZENE (NMOCD = 10 mg/kg)
 BTEX: TOTAL BTEX (NMOCD = 50 mg/kg)
 GRO+DRO: GASOLINE RANGE AND DIESEL RANGE
 ORGANICS (NMOCD = 1,000 mg/kg)
 TPH: TOTAL PETROLEUM HYDROCARBONS
 (NMOCD = 2,500 mg/kg)
 Cl: CHLORIDE (NMOCD = 10,000 mg/kg)
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
 NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
 REGULATORY STANDARD



LEGEND



RELEASE LOCATION



FINAL INVESTIGATION SAMPLE



RELEASE EXTENT



FRAC TANKS

IMAGE COURTESY OF ESRI

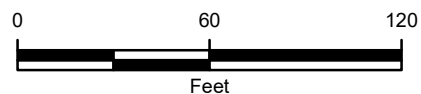


FIGURE 2
 SOIL SAMPLE LOCATIONS
 REMUDA SOUTH 25 STATE #101H
 UNIT E SEC 25 T23S R29E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



NOTE: REMEDIATION PERMIT NUMBERS 2RP-5025 & 2RP-5028

**TABLE 1
SOIL ANALYTICAL RESULTS**

**REMUDA SOUTH 25 STATE #101H
REMEDATION PERMIT NUMBERS 2RP-5025 AND 2RP-5028
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	12/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	17.7	<15.0	17.7	17.7	5,310
SS01	1	12/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	19.2	<15.0	19.2	19.2	970
SS02	0.5	12/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	18.4	<14.9	18.4	18.4	5,080
SS02	1	12/06/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	665
SS03	0.5	12/06/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,470
SS03	1	12/06/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	656
SS04	0.5	12/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	216
SS04	1	12/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	79.9
SS05	0.5	12/07/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	33.7	<15.0	33.7	33.7	311
SS05	1	12/07/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	164
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold - indicates result exceeds the applicable regulatory standard





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

State of New Mexico
Energy Minerals and Natural
Resources 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	NMAP1829770394
District RP	2RP-5025
Facility ID	N/A
Application ID	pMAP1829769997

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) NMAP1829770394
Contact mailing address 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.276934 Longitude -103.944746
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Remuda South 25 State 101H	Site Type Tank Battery
Date Release 10/4/2018	API# 30-015-44364

Unit Letter	Section	Township	Range	County
E	25	23S	29E	Eddy

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input checked="" type="checkbox"/> Other Calcium Carbonate	Volume/Weight Released (bbls) 6	Volume/Weight Recovered (bbls) 5

Cause of Release

Crew was circulating fluid when frac tank overflowed, releasing 5bbl calcium carbonate fluid into impervious lined containment and 1bbl onto the pad surface. All 5bbl recovered from the lined containment, none recovered from the ground.

Incident ID	NMAP1829770394
District RP	2RP-5025
Facility ID	N/A
Application ID	pMAP1829769997

Was this a major release as defined by 19.15.29.7(A) NMAC?

☐ Yes ☒ No

If YES, for what reason(s) does the responsible party consider this a major release?

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Initial Response

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

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature:  Date: 10-19-18

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

OCD Only

Received by:  Date: 10/24/18

Incident ID	
District RP	
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?

88 (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.

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature:  Date: 12/29/2018

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature:  Date: 12-29-18

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

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

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

State of New Mexico
Energy Minerals and Natural
Resources 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	NMAP1830759028
District RP	2 RP-5028
Facility ID	N/A
Application ID	pMAP1830758714

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) NMAP1830759028
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.276934 Longitude -103.944746
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Remuda South 25 State #101H	Site Type Production Well Facility
Date Release Discovered 10/8/2018	API# (if applicable) 30-015-44364

Unit Letter	Section	Township	Range	County
E	25	23S	29E	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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input checked="" type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Water-based drilling mud	414 barrels	214 barrels

Cause of Release



While transferring mud from one frac tank to another, a valve was accidentally left open during transfer and released 414 bbl of water based mud into lined containment. The containment failed, allowing some mud to escape onto pad. The consultant on the job had gauged tank prior to release. After recovery effort and recovered fluids were returned to the tank, tank was regauged to determine volume not recovered from pad surface.

Incident ID	NMAP1830/59028
District RP	2 RP-5028
Facility ID	N/A
Application ID	pMAP1830758714

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 Kyle Littrell to Maria Pruett, Mike Bratcher, and Jim Griswold (NMOCD), Ryan Mann and Mark Naranjo (SLO) Shelly Tucker (BLM), on 10/19/2018 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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Amy C. Ruth</u> Signature:  email: <u>Amy_Ruth@xtoenergy.com</u>	Title: <u>SH&E Coordinator</u> Date: <u>10/23/2018</u> Telephone: <u>575-689-3380</u>
OCD Only Received by:  Date: <u>11/03/18</u>	

Incident ID	
District RP	
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?	__ 88 __ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature:  Date: 12/29/2018

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature:  Date: 12/29/2018

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

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____



Analytical Report 608193

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Remuda South 25 State 101H

17-DEC-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



17-DEC-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **608193**

Remuda South 25 State 101H

Project Address: Eddy, NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 608193. 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. 608193 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	12-06-18 15:10	0.5 ft	608193-001
SS01	S	12-06-18 15:20	1 ft	608193-002
SS02	S	12-06-18 15:30	0.5 ft	608193-003
SS02	S	12-06-18 15:40	1 ft	608193-004
SS03	S	12-06-18 15:50	0.5 ft	608193-005
SS03	S	12-06-18 16:10	1 ft	608193-006
SS04	S	12-06-18 16:30	0.5 ft	608193-007
SS04	S	12-06-18 16:50	1 ft	608193-008
SS05	S	12-07-18 08:10	0.5 ft	608193-009
SS05	S	12-07-18 08:20	1 ft	608193-010



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda South 25 State 101H

Project ID:
Work Order Number(s): 608193

Report Date: 17-DEC-18
Date Received: 12/11/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3072899 BTEX by EPA 8021B

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



Certificate of Analysis Summary 608193

LT Environmental, Inc., Arvada, CO

Project Name: Remuda South 25 State 101H



Project Id:

Contact: Adrian Baker

Project Location: Eddy, NM

Date Received in Lab: Tue Dec-11-18 12:30 pm

Report Date: 17-DEC-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	608193-001	608193-002	608193-003	608193-004	608193-005	608193-006
	<i>Field Id:</i>	SS01	SS01	SS02	SS02	SS03	SS03
	<i>Depth:</i>	0.5- ft	1- ft	0.5- ft	1- ft	0.5- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-06-18 15:10	Dec-06-18 15:20	Dec-06-18 15:30	Dec-06-18 15:40	Dec-06-18 15:50	Dec-06-18 16:10
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-14-18 08:00	Dec-14-18 08:00	Dec-14-18 08:00	Dec-14-18 08:00	Dec-14-18 08:00	Dec-14-18 08:00
	<i>Analyzed:</i>	Dec-14-18 17:45	Dec-14-18 18:07	Dec-14-18 18:28	Dec-14-18 18:50	Dec-14-18 19:11	Dec-14-18 19:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199
m,p-Xylenes		<0.00400 0.00400	<0.00399 0.00399	<0.00401 0.00401	<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199
Inorganic Anions by EPA 300	<i>Extracted:</i>	Dec-11-18 15:55	Dec-11-18 15:55	Dec-11-18 15:55	Dec-11-18 15:55	Dec-11-18 15:55	Dec-11-18 15:55
	<i>Analyzed:</i>	Dec-11-18 19:09	Dec-11-18 19:15	Dec-11-18 19:21	Dec-11-18 19:28	Dec-11-18 19:34	Dec-11-18 19:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5310 49.5	970 25.0	5080 50.0	665 5.00	1470 25.0	656 25.0
TPH by SW8015 Mod	<i>Extracted:</i>	Dec-11-18 13:00	Dec-11-18 13:00	Dec-11-18 13:00	Dec-11-18 13:00	Dec-11-18 13:00	Dec-11-18 13:00
	<i>Analyzed:</i>	Dec-11-18 14:55	Dec-11-18 15:52	Dec-11-18 16:10	Dec-11-18 16:29	Dec-11-18 16:48	Dec-11-18 17:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		17.7 15.0	19.2 15.0	18.4 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		17.7 15.0	19.2 15.0	18.4 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 608193

LT Environmental, Inc., Arvada, CO

Project Name: Remuda South 25 State 101H



Project Id:

Contact: Adrian Baker

Project Location: Eddy, NM

Date Received in Lab: Tue Dec-11-18 12:30 pm

Report Date: 17-DEC-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	608193-007	608193-008	608193-009	608193-010		
	<i>Field Id:</i>	SS04	SS04	SS05	SS05		
	<i>Depth:</i>	0.5- ft	1- ft	0.5- ft	1- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Dec-06-18 16:30	Dec-06-18 16:50	Dec-07-18 08:10	Dec-07-18 08:20		
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-14-18 08:00	Dec-14-18 08:00	Dec-14-18 08:00	Dec-14-18 08:00		
	<i>Analyzed:</i>	Dec-14-18 19:53	Dec-14-18 20:14	Dec-14-18 20:56	Dec-14-18 20:34		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	<0.00402 0.00402	<0.00399 0.00399		
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Inorganic Anions by EPA 300	<i>Extracted:</i>	Dec-11-18 15:55	Dec-11-18 15:55	Dec-11-18 15:55	Dec-11-18 15:55		
	<i>Analyzed:</i>	Dec-11-18 19:58	Dec-11-18 20:05	Dec-11-18 20:11	Dec-11-18 20:17		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		216 25.0	79.9 24.9	311 5.00	164 4.98		
TPH by SW8015 Mod	<i>Extracted:</i>	Dec-11-18 13:00	Dec-11-18 13:00	Dec-11-18 13:00	Dec-11-18 13:00		
	<i>Analyzed:</i>	Dec-11-18 17:27	Dec-11-18 17:46	Dec-11-18 18:05	Dec-11-18 18:24		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9		
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	33.7 15.0	<14.9 14.9		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9		
Total TPH		<15.0 15.0	<15.0 15.0	33.7 15.0	<14.9 14.9		

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS01**
Lab Sample Id: 608193-001

Matrix: Soil
Date Collected: 12.06.18 15.10

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5310	49.5	mg/kg	12.11.18 19.09		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.11.18 14.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	17.7	15.0	mg/kg	12.11.18 14.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.11.18 14.55	U	1
Total TPH	PHC635	17.7	15.0	mg/kg	12.11.18 14.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	12.11.18 14.55	
o-Terphenyl	84-15-1	96	%	70-135	12.11.18 14.55	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS01**
Lab Sample Id: 608193-001

Matrix: Soil
Date Collected: 12.06.18 15.10

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3072899

Date Prep: 12.14.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.14.18 17.45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.14.18 17.45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.14.18 17.45	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.14.18 17.45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.14.18 17.45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.14.18 17.45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.14.18 17.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	12.14.18 17.45		
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.14.18 17.45		



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS01**
Lab Sample Id: 608193-002

Matrix: Soil
Date Collected: 12.06.18 15.20

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	970	25.0	mg/kg	12.11.18 19.15		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.11.18 15.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.2	15.0	mg/kg	12.11.18 15.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.11.18 15.52	U	1
Total TPH	PHC635	19.2	15.0	mg/kg	12.11.18 15.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	12.11.18 15.52	
o-Terphenyl	84-15-1	92	%	70-135	12.11.18 15.52	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS01**
Lab Sample Id: 608193-002

Matrix: Soil
Date Collected: 12.06.18 15.20

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.14.18 08.00

Basis: Wet Weight

Seq Number: 3072899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.14.18 18.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.14.18 18.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.14.18 18.07	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.14.18 18.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.14.18 18.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.14.18 18.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.14.18 18.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.14.18 18.07		
1,4-Difluorobenzene	540-36-3	88	%	70-130	12.14.18 18.07		



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS02**
Lab Sample Id: 608193-003

Matrix: Soil
Date Collected: 12.06.18 15.30

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5080	50.0	mg/kg	12.11.18 19.21		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	12.11.18 16.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	18.4	14.9	mg/kg	12.11.18 16.10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	12.11.18 16.10	U	1
Total TPH	PHC635	18.4	14.9	mg/kg	12.11.18 16.10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	12.11.18 16.10	
o-Terphenyl	84-15-1	94	%	70-135	12.11.18 16.10	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS02**
Lab Sample Id: 608193-003

Matrix: Soil
Date Collected: 12.06.18 15.30

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.14.18 08.00

Basis: Wet Weight

Seq Number: 3072899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.14.18 18.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.14.18 18.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.14.18 18.28	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.14.18 18.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.14.18 18.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.14.18 18.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.14.18 18.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	12.14.18 18.28		
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.14.18 18.28		



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS02**
Lab Sample Id: 608193-004

Matrix: Soil
Date Collected: 12.06.18 15.40

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	665	5.00	mg/kg	12.11.18 19.28		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.11.18 16.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.11.18 16.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.11.18 16.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.11.18 16.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	12.11.18 16.29	
o-Terphenyl	84-15-1	92	%	70-135	12.11.18 16.29	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS02**
Lab Sample Id: 608193-004

Matrix: Soil
Date Collected: 12.06.18 15.40

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.14.18 08.00

Basis: Wet Weight

Seq Number: 3072899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.14.18 18.50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.14.18 18.50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.14.18 18.50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.14.18 18.50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.14.18 18.50	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.14.18 18.50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.14.18 18.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.14.18 18.50		
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.14.18 18.50		



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS03**
Lab Sample Id: 608193-005

Matrix: Soil
Date Collected: 12.06.18 15.50

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1470	25.0	mg/kg	12.11.18 19.34		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.11.18 16.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.11.18 16.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.11.18 16.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.11.18 16.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	12.11.18 16.48	
o-Terphenyl	84-15-1	95	%	70-135	12.11.18 16.48	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS03**
Lab Sample Id: 608193-005

Matrix: Soil
Date Collected: 12.06.18 15.50

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.14.18 08.00

Basis: Wet Weight

Seq Number: 3072899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.14.18 19.11	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.14.18 19.11	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.14.18 19.11	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.14.18 19.11	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.14.18 19.11	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.14.18 19.11	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.14.18 19.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.14.18 19.11		
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.14.18 19.11		



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS03**
Lab Sample Id: 608193-006

Matrix: Soil
Date Collected: 12.06.18 16.10

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	656	25.0	mg/kg	12.11.18 19.52		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.11.18 17.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.11.18 17.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.11.18 17.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.11.18 17.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	12.11.18 17.08	
o-Terphenyl	84-15-1	95	%	70-135	12.11.18 17.08	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS03**
Lab Sample Id: 608193-006

Matrix: Soil
Date Collected: 12.06.18 16.10

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3072899

Date Prep: 12.14.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.14.18 19.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.14.18 19.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.14.18 19.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.14.18 19.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.14.18 19.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.14.18 19.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.14.18 19.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	12.14.18 19.32		
1,4-Difluorobenzene	540-36-3	94	%	70-130	12.14.18 19.32		



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS04**
Lab Sample Id: 608193-007

Matrix: Soil
Date Collected: 12.06.18 16.30

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	216	25.0	mg/kg	12.11.18 19.58		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.11.18 17.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.11.18 17.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.11.18 17.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.11.18 17.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	12.11.18 17.27	
o-Terphenyl	84-15-1	94	%	70-135	12.11.18 17.27	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS04**
Lab Sample Id: 608193-007

Matrix: Soil
Date Collected: 12.06.18 16.30

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.14.18 08.00

Basis: Wet Weight

Seq Number: 3072899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.14.18 19.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.14.18 19.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.14.18 19.53	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.14.18 19.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.14.18 19.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.14.18 19.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.14.18 19.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	80	%	70-130	12.14.18 19.53		
4-Bromofluorobenzene	460-00-4	99	%	70-130	12.14.18 19.53		



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS04**
Lab Sample Id: 608193-008

Matrix: Soil
Date Collected: 12.06.18 16.50

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	79.9	24.9	mg/kg	12.11.18 20.05		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.11.18 17.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.11.18 17.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.11.18 17.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.11.18 17.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	12.11.18 17.46	
o-Terphenyl	84-15-1	96	%	70-135	12.11.18 17.46	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS04**
Lab Sample Id: 608193-008

Matrix: Soil
Date Collected: 12.06.18 16.50

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.14.18 08.00

Basis: Wet Weight

Seq Number: 3072899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.14.18 20.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.14.18 20.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.14.18 20.14	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.14.18 20.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.14.18 20.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.14.18 20.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.14.18 20.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	12.14.18 20.14		
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.14.18 20.14		



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS05**
Lab Sample Id: 608193-009

Matrix: Soil
Date Collected: 12.07.18 08.10

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	311	5.00	mg/kg	12.11.18 20.11		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.11.18 18.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	33.7	15.0	mg/kg	12.11.18 18.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.11.18 18.05	U	1
Total TPH	PHC635	33.7	15.0	mg/kg	12.11.18 18.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	12.11.18 18.05	
o-Terphenyl	84-15-1	95	%	70-135	12.11.18 18.05	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS05**
Lab Sample Id: 608193-009

Matrix: Soil
Date Collected: 12.07.18 08.10

Date Received: 12.11.18 12.30
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3072899

Date Prep: 12.14.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.14.18 20.56	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.14.18 20.56	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.14.18 20.56	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.14.18 20.56	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.14.18 20.56	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.14.18 20.56	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.14.18 20.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	12.14.18 20.56		
1,4-Difluorobenzene	540-36-3	96	%	70-130	12.14.18 20.56		



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS05**
Lab Sample Id: 608193-010

Matrix: Soil
Date Collected: 12.07.18 08.20

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3072521

Date Prep: 12.11.18 15.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	164	4.98	mg/kg	12.11.18 20.17		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3072546

Date Prep: 12.11.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	12.11.18 18.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	12.11.18 18.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	12.11.18 18.24	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	12.11.18 18.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	12.11.18 18.24	
o-Terphenyl	84-15-1	91	%	70-135	12.11.18 18.24	



Certificate of Analytical Results 608193



LT Environmental, Inc., Arvada, CO

Remuda South 25 State 101H

Sample Id: **SS05**
Lab Sample Id: 608193-010

Matrix: Soil
Date Collected: 12.07.18 08.20

Date Received: 12.11.18 12.30
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.14.18 08.00

Basis: Wet Weight

Seq Number: 3072899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.14.18 20.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.14.18 20.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.14.18 20.34	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.14.18 20.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.14.18 20.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.14.18 20.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.14.18 20.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	12.14.18 20.34		
1,4-Difluorobenzene	540-36-3	97	%	70-130	12.14.18 20.34		

- 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 608193

LT Environmental, Inc.
Remuda South 25 State 101H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3072521

MB Sample Id: 7667827-1-BLK

Matrix: Solid

LCS Sample Id: 7667827-1-BKS

Prep Method: E300P

Date Prep: 12.11.18

LCSD Sample Id: 7667827-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	253	101	267	107	90-110	5	20	mg/kg	12.11.18 18:38	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3072521

Parent Sample Id: 608081-012

Matrix: Soil

MS Sample Id: 608081-012 S

Prep Method: E300P

Date Prep: 12.11.18

MSD Sample Id: 608081-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.46	250	268	106	249	99	90-110	7	20	mg/kg	12.11.18 18:57	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3072521

Parent Sample Id: 608193-010

Matrix: Soil

MS Sample Id: 608193-010 S

Prep Method: E300P

Date Prep: 12.11.18

MSD Sample Id: 608193-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	164	249	394	92	409	98	90-110	4	20	mg/kg	12.11.18 20:23	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3072546

MB Sample Id: 7667844-1-BLK

Matrix: Solid

LCS Sample Id: 7667844-1-BKS

Prep Method: TX1005P

Date Prep: 12.11.18

LCSD Sample Id: 7667844-1-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	857	86	859	86	70-135	0	20	mg/kg	12.11.18 14:17	
Diesel Range Organics (DRO)	<8.13	1000	898	90	897	90	70-135	0	20	mg/kg	12.11.18 14:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		103		105		70-135	%	12.11.18 14:17
o-Terphenyl	91		91		91		70-135	%	12.11.18 14:17

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

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

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

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



QC Summary 608193

LT Environmental, Inc.

Remuda South 25 State 101H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3072546

Parent Sample Id: 608193-001

Matrix: Soil

MS Sample Id: 608193-001 S

Prep Method: TX1005P

Date Prep: 12.11.18

MSD Sample Id: 608193-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	888	89	1000	100	70-135	12	20	mg/kg	12.11.18 15:14	
Diesel Range Organics (DRO)	17.7	999	872	86	1040	102	70-135	18	20	mg/kg	12.11.18 15:14	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		124		70-135	%	12.11.18 15:14
o-Terphenyl	87		107		70-135	%	12.11.18 15:14

Analytical Method: BTEX by EPA 8021B

Seq Number: 3072899

MB Sample Id: 7668059-1-BLK

Matrix: Solid

LCS Sample Id: 7668059-1-BKS

Prep Method: SW5030B

Date Prep: 12.14.18

LCSD Sample Id: 7668059-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.104	104	0.107	107	70-130	3	35	mg/kg	12.14.18 09:56	
Toluene	<0.00200	0.0998	0.0914	92	0.0934	94	70-130	2	35	mg/kg	12.14.18 09:56	
Ethylbenzene	<0.00200	0.0998	0.110	110	0.115	115	70-130	4	35	mg/kg	12.14.18 09:56	
m,p-Xylenes	0.00109	0.200	0.221	111	0.229	115	70-130	4	35	mg/kg	12.14.18 09:56	
o-Xylene	<0.00200	0.0998	0.107	107	0.111	111	70-130	4	35	mg/kg	12.14.18 09:56	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		127		119		70-130	%	12.14.18 09:56
4-Bromofluorobenzene	75		109		110		70-130	%	12.14.18 09:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3072899

Parent Sample Id: 608618-009

Matrix: Soil

MS Sample Id: 608618-009 S

Prep Method: SW5030B

Date Prep: 12.14.18

MSD Sample Id: 608618-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0453	45	0.0359	36	70-130	23	35	mg/kg	12.14.18 11:42	X
Toluene	<0.00199	0.0996	0.0520	52	0.0422	42	70-130	21	35	mg/kg	12.14.18 11:42	X
Ethylbenzene	<0.00199	0.0996	0.0564	57	0.0474	47	70-130	17	35	mg/kg	12.14.18 11:42	X
m,p-Xylenes	<0.00398	0.199	0.101	51	0.0895	45	70-130	12	35	mg/kg	12.14.18 11:42	X
o-Xylene	<0.00199	0.0996	0.0395	40	0.0489	49	70-130	21	35	mg/kg	12.14.18 11:42	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	80		90		70-130	%	12.14.18 11:42
4-Bromofluorobenzene	97		107		70-130	%	12.14.18 11:42

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

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

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

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



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

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

Phoenix, Arizona (480-355-0900)

www.xenco.com

[illegible]

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

5	✓ 3.0/3.5 PB-0.1
---	------------------

773931874366

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

SHIP DATE: 10DEC18
ACTWGT: 5.100 LB
CAD: 101813106/NET 4040
DIMS: 24X16X14 IN
BILL RECIPIENT

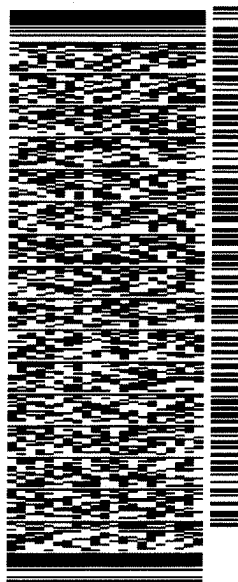
TO HOLD FOR XENCO

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

MIDLAND TX 79711

REF (806) 794-1296

DEPT. INV. PO.



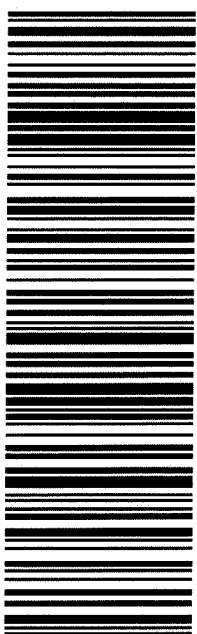
552J2/E4AF/DCA5

TRK# 7739 3187 4366
0201

TUE - 11 DEC HOLD
STANDARD OVERNIGHT

41 MAFA

HLD
MAFA
LBB
TX-US



After printing this label:

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

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

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



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 12/11/2018 12:30:00 PM

Work Order #: 608193

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 12/11/2018


Checklist reviewed by:

Jessica Kramer

Date: 12/11/2018




View west showing release area

Project: 012918168	XTO Energy, Inc. Remuda South 25 State #101H	 <i>Advancing Opportunity</i>
December 17, 2018	Photographic Log	




View northeast showing release area; well heads and tanks in background

Project: 012918168	XTO Energy, Inc. Remuda South 25 State #101H	 <i>Advancing Opportunity</i>
December 17, 2018	Photographic Log	



View north of release area

Project: 012918168	XTO Energy, Inc. Remuda South 25 State #101H	 <i>Advancing Opportunity</i>
December 17, 2018	Photographic Log	





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

Boring Number:

SS01

Date:

12/6/2018

Project:

Remuda Basin 25 State #101H

Project Number:

012918168

Logged By:

L.Laumbach

Drilled By:

LTE

BORING LOG DIAGRAM

Lat/Long: 32.276934, -103.944746	Elevation: 3,063 feet	Detector: PID	Drilling Method: Hand Auger	Sampling Method: Continuous	Hole Diameter: 2"	Total Depth: 1-foot bgs
-------------------------------------	--------------------------	------------------	--------------------------------	--------------------------------	----------------------	----------------------------

Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: NA
--------------------	------------------------	----------------------	------------------	--------------------	-----------------------

Gravel Pack: NA	Seal: NA	Grout: NA	Comments:
--------------------	-------------	--------------	-----------

Penetration Resistance	Moisture Content	PID (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
	Dry	0.0			0			Caliche
	Dry	0.0		SS01@0.5'	1			Sandy loam with 1-inch clasts
				SS01@1'				
					2			TD = 1 feet bgs
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Boring Number:

SS02

Date:

12/6/2018

Project:

Remuda Basin 25 State #101H

Project Number:

012918168

Logged By:

L.Laumbach

Drilled By:

LTE

BORING LOG DIAGRAM

Lat/Long: 32.276934, -103.944746	Elevation: 3,063 feet	Detector: PID	Drilling Method: Hand Auger	Sampling Method: Continuous	Hole Diameter: 2"	Total Depth: 1-foot bgs
-------------------------------------	--------------------------	------------------	--------------------------------	--------------------------------	----------------------	----------------------------

Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: NA
--------------------	------------------------	----------------------	------------------	--------------------	-----------------------

Gravel Pack: NA	Seal: NA	Grout: NA	Comments:
--------------------	-------------	--------------	-----------

Penetration Resistance	Moisture Content	PID (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
	Dry	1.0			0	III		Caliche
	Dry	50.0		SS02@0.5'	1			Sandy loam with 1-inch clasts
				SS02@1'				
					2			TD = 1 feet bgs
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Boring Number:
SS03

Date:
12/6/2018

Project:
Remuda Basin 25 State #101H

Project Number:
012918168

Logged By:
L.Laumbach

Drilled By:
LTE

BORING LOG DIAGRAM

Lat/Long: 32.276934, -103.944746	Elevation: 3,063 feet	Detector: PID	Drilling Method: Hand Auger	Sampling Method: Continuous	Hole Diameter: 2"	Total Depth: 1-foot bgs
-------------------------------------	--------------------------	------------------	--------------------------------	--------------------------------	----------------------	----------------------------

Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: NA
--------------------	------------------------	----------------------	------------------	--------------------	-----------------------

Gravel Pack: NA	Seal: NA	Grout: NA	Comments:
--------------------	-------------	--------------	-----------

Penetration Resistance	Moisture Content	PID (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
	Dry	0.0			0			Caliche
	Dry	0.0		SS03@0.5'	1			Sandy loam with 1-inch clasts
				SS03@1'				
					2			TD = 1 feet bgs
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Boring Number:

SS04

Date:

12/6/2018

Project:

Remuda Basin 25 State #101H

Project Number:

012918168

Logged By:

L.Laumbach

Drilled By:

LTE

BORING LOG DIAGRAM

Lat/Long: 32.276934, -103.944746	Elevation: 3,063 feet	Detector: PID	Drilling Method: Hand Auger	Sampling Method: Continuous	Hole Diameter: 2"	Total Depth: 1-foot bgs
-------------------------------------	--------------------------	------------------	--------------------------------	--------------------------------	----------------------	----------------------------

Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: NA
--------------------	------------------------	----------------------	------------------	--------------------	-----------------------

Gravel Pack: NA	Seal: NA	Grout: NA	Comments:
--------------------	-------------	--------------	-----------

Penetration Resistance	Moisture Content	PID (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
	Dry	0.0			0			Caliche
	Dry	0.0		SS04@0.5'	1			Sandy loam with 1-inch clasts
				SS04@1'				
					2			TD = 1 feet bgs
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Boring Number:
SS05

Date:
12/7/2018

Project:
Remuda Basin 25 State #101H

Project Number:
012918168

Logged By:
L.Laumbach

Drilled By:
LTE

BORING LOG DIAGRAM

Lat/Long: 32.276934, -103.944746	Elevation: 3,063 feet	Detector: PID	Drilling Method: Hand Auger	Sampling Method: Continuous	Hole Diameter: 2"	Total Depth: 1-foot bgs
-------------------------------------	--------------------------	------------------	--------------------------------	--------------------------------	----------------------	----------------------------

Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: NA
--------------------	------------------------	----------------------	------------------	--------------------	-----------------------

Gravel Pack: NA	Seal: NA	Grout: NA	Comments:
--------------------	-------------	--------------	-----------

Penetration Resistance	Moisture Content	PID (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
	Dry				0			Caliche
	Dry			SS05@0.5'	1			Sandy loam with 1-inch clasts
				SS05@1'				
					2			TD = 1 feet bgs
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			