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

November 19, 2018

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

RE: Deferral Request
Remuda Basin Central Tank Battery
Remediation Permit Number 2RP-4958
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following request to defer final remediation of impacted soil at the Remuda Basin Central Tank Battery (Site) located in Unit Letter F, Section 19, Township 23 South, Range 30 East, in Eddy, New Mexico (Figure 1). XTO has attempted to excavate soil from the well pad that was impacted by a tank overflow discovered on August 21, 2018. The excavation was impeded by the presence of production equipment and extensive above- and belowground pipelines, but mostly by shallow bedrock that is not practical to remove without significant deconstruction of the well pad. XTO has removed all soil that is reasonable to excavate at this time and requests approval to defer additional remediation until major well pad construction/alteration or final plugging and abandonment, whichever is sooner.

BACKGROUND

The source of the release is at latitude 32.290595 degrees (°) and longitude -103.92319° and was the result of a fuse burning out and causing the high-level alarm at the tank battery to fail. The transfer pump did not receive an activation signal and one aboveground tank overflowed approximately 1 barrel (bbl) of oil and 54 bbls of produced water into the earthen containment surrounding the tanks and onto the well pad. Vacuum trucks were dispatched and recovered all standing fluid; approximately 1 bbl of oil and 49 bbl of produced water. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on September 4, 2018 and was assigned Remediation Permit Number (RP) 2RP-4958 (Attachment 1).

The release 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 less than 50 feet below ground surface (bgs) based on the nearest water well data. The nearest

permitted water well with depth to water data is C 03478, located approximately 2 miles east of the Site. Ground surface elevation at the well location is 3,186 feet, which is 126 feet higher in elevation than the Site. The water well is used for livestock watering and has a depth to groundwater of 105 feet and a total depth of 230 feet. The groundwater potentiometric map used by NMOCD for Eddy County indicates groundwater is less than 50 feet deep at the Site. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 250 feet west 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. Carbonate rocks are near the surface, but the Site does not appear to be in an unstable area based on the condition of long-term production infrastructure at the Site and nearby vicinity. LTE has determined closure criteria to be 600 milligrams per kilogram (mg/kg) for chloride and 100 mg/kg for total petroleum hydrocarbons (TPH), 50 mg/kg for benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 10 mg/kg for benzene.

RELEASE RESPONSE

On October 2, 2018, LTE inspected the Site and observed visible staining and hydrocarbon odors in the soil around the storage tanks on the south end of the pad, the separator on the west end of the pad, and the upright tanks along the northern boundary of the pad. There was no evidence that the release penetrated a perimeter berm and migrated off pad. The release footprint was mapped and is depicted in Figure 2.

From October 25, 2018 through November 15, 2018, LTE personnel oversaw the excavation of impacted soil accomplished by hydro-excavation or use of an excavator. To delineate hydrocarbon and chloride impacts to soil and to direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated from the release area to depths ranging from 3 feet bgs in the eastern portion of the excavation to 6 feet bgs in the western-most portion of the excavation. At approximately 3 feet bgs, LTE encountered bedrock. Excavation of the bedrock was ineffectual, resulting in large, resistant and pervasive boulders, some measuring 6 feet by 4 feet (See attached Photo Log).

The bedrock restricted vertical progress and lateral progress was further restricted by operating equipment and pipelines. XTO's safety policy restricts soil disturbing activities to a 3-foot radius of any onsite storage tanks or process equipment. This safety policy is established to protect workers and to reduce the likelihood of compromising the foundation of the process equipment, storage tanks, and pipelines. This policy had to be enforced along the northern, southern, eastern, and western sidewalls of the excavation where impacted soil was observed within three feet of the process equipment and pipelines. The excavation was advanced to three feet from the process equipment and pipelines by hydro-excavation, mechanical, and hand digging

methods to remove as much impacted soil as possible (Photo Log). Additional excavation to the north, south, and east was obstructed by the reach of the hydro-vacuum hose.

Based on inadequate progress and the impracticality of excavating bedrock, LTE stopped on-site soil removal activities. The existing excavation measured approximately 2,400 square feet in area with the depth ranging from approximately 3 feet to 6 feet bgs throughout. The horizontal extent of the excavation is illustrated on Figure 2. Approximately 540 cubic yards of impacted soil were removed, and impacted soil was transported and properly disposed of at the Lea Land Landfill Halfway Facility, in Hobbs, New Mexico.

SOIL SAMPLING

LTE collected six excavation floor soil samples (FS01 through FS06) and six excavation sidewall samples (SW01 through SW06) from depths of 3 feet to 6 feet bgs to assess the vertical and lateral extent of remaining soil impacts. The 5-point composite samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thorough mixing. Samples were then placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.

Laboratory analytical results indicated that soil samples FS02 and FS03 were compliant with the NMOCD site-specific closure for BTEX, TPH, and chloride. Laboratory analytical results exceeded the closure criteria for TPH or chloride in all other samples. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 2.

DEFERRAL REQUEST

Approximately 540 cubic yards of impacted soil were excavated from the Site; however, impacted soil was left in place due to the presence of bedrock in the subsurface and XTO's safety policy regarding earth-moving activities within 3 feet of production equipment. Remaining soil impact is within areas immediately under and around production equipment and pipelines. Hydro-excavation was applied to the maximum extent of the hydro-excavator's reach. Remediation and full delineation of soil near the equipment will require major facility deconstruction. Likewise, excavation of bedrock is impractical until deconstruction of the facility. The bedrock is too hard to remove without engineering, sufficient working space, and equipment designed to pulverize bedrock.

Based on limited site conditions, XTO requests to backfill the existing excavation and complete delineation and remediation until major well pad construction/alteration or final plugging and abandonment, whichever is sooner. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. Most free liquids were removed during response activities and no saturated soils were left in place. The entire Site has a perimeter berm that will prevent potential surface migration of any remaining impact at the surface near production equipment. The majority of that soil is within an additional on-site containment berm. Although groundwater is estimated to be less than 50 feet deep at the Site, bedrock lithology is likely to restrict vertical migration of remaining contaminants. The remaining TPH concentrations range from 159 mg/kg to 2,610 mg/kg and are mostly comprised of DRO and ORO components. These heavier-chain hydrocarbon constituents are less mobile in soil than GRO, which is mostly not-detected in the laboratory analytical results. Remaining chloride concentrations exceeding NMOCD standards range from 824 mg/kg to 4,180 mg/kg, with most sample results in the 1,500 mg/kg-range. Lithology at the Site is approximately 3 feet of alluvial silts and sands overlying the bedrock, interpreted by the site geologist as a consolidated dolomite or limestone. The bedrock is part of the upper Rustler Formation, which outcrops nearby. The Rustler Formation is generally composed of a sequence of anhydrite and gypsum with interbedded dolomite and clay in the upper section. Crystalline gypsum and anhydrite were observed, but most of the bedrock appeared to be fine-grained carbonate bedrock, with the fine-grained quality contributing to low permeability. The release liquids likely migrated vertically through the alluvial deposits but were restricted from significant penetration through the bedrock. Based on the fine-grained properties of the bedrock, it is unlikely that migration of contaminants to groundwater will occur before soil can be remediated. An updated NMOCD Form C-141 is included as Attachment 1.

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, M.S., P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Maria Pruett, NMOCD
Ryan Mann, State Land Office

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-4958)
Attachment 2	Laboratory Analytical Reports
Attachment 3	Photo Log

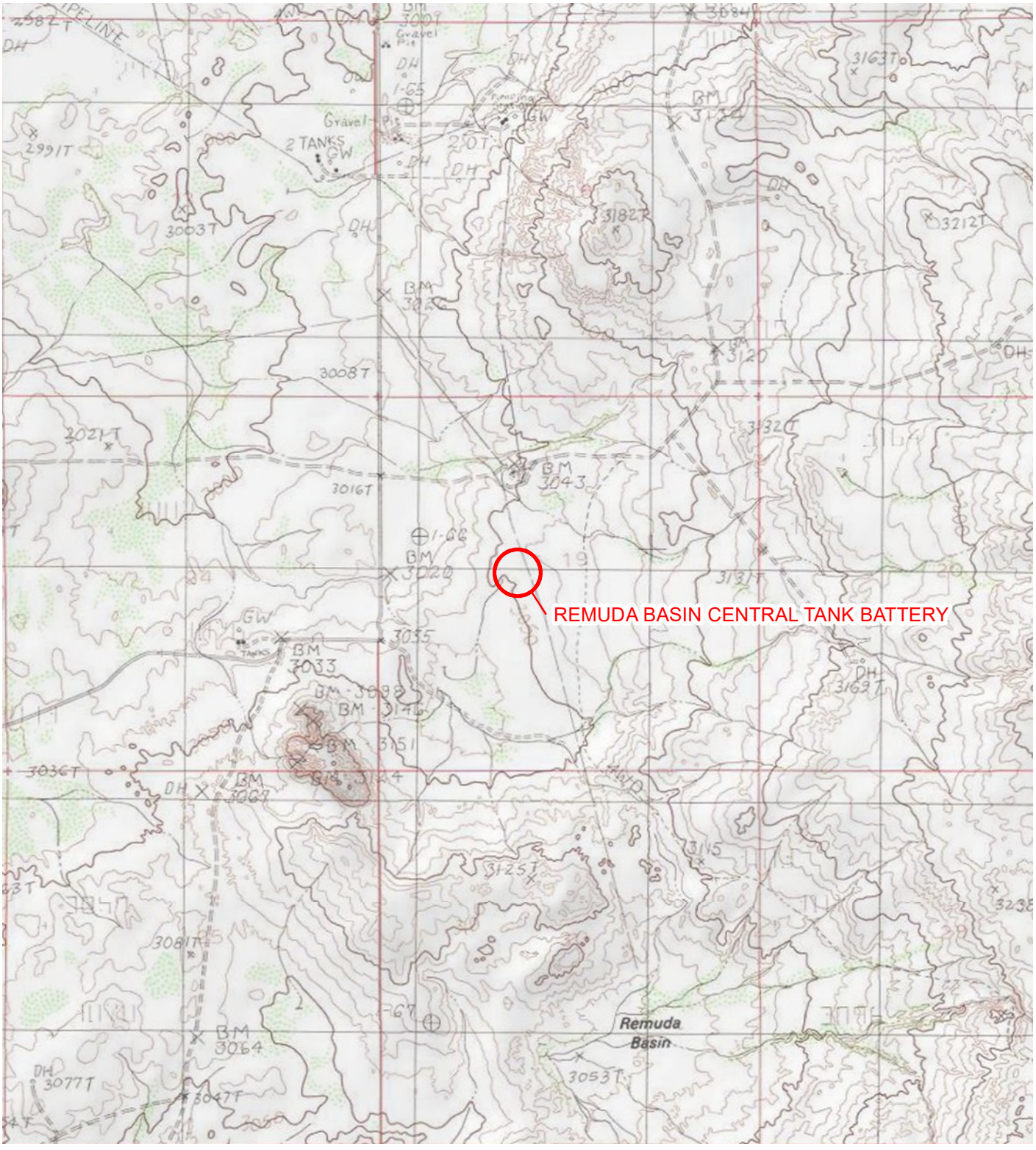

IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-4958

FIGURE 1
SITE LOCATION MAP
REMUDA BASIN CENTRAL TANK BATTERY
UNIT F SEC 19 T23S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918152_REMUDA BAISN CENTRAL TANK BATTERY\012918152_FIG01_SL_2018_4958.mxd

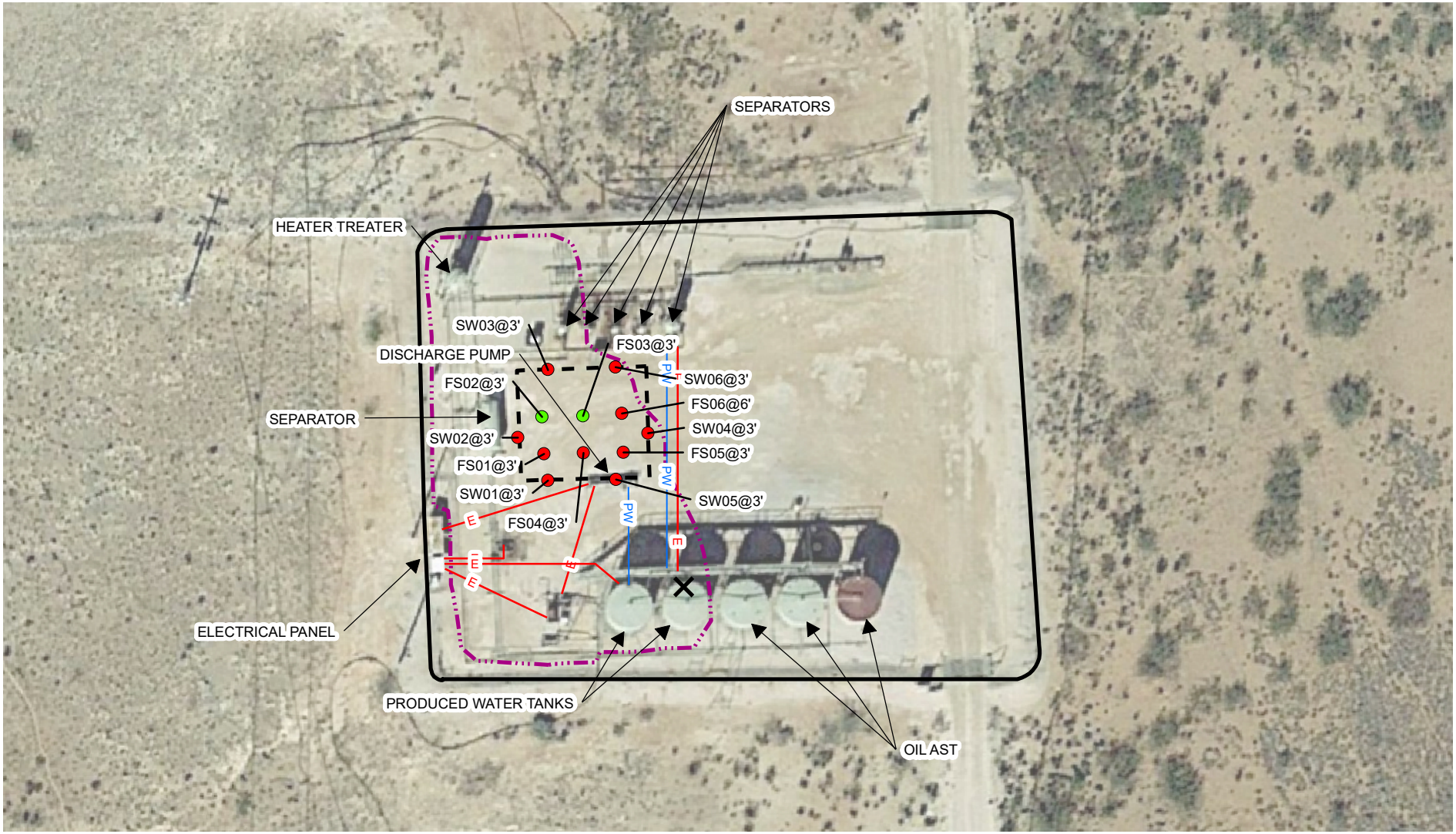

IMAGE COURTESY OF GOOGLE EARTH 2017

LEGEND

- RELEASE LOCATION
- PRELIMINARY SOIL SAMPLE
- CONFIRMATION SOIL SAMPLE
- ELECTRIC LINE
- PRODUCED WATER LINE
- RELEASE EXTENT
- BERM
- EXCAVATION EXTENT

*ONLY SUBSURFACE UTILITIES AFFECTING REMEDIATION PROGRESS ARE IDENTIFIED
AST: ABOVEGROUND STORAGE TANK
NOTE: REMEDIATION PERMIT NUMBER 2RP-4958

0 50 100
Feet

N

FIGURE 2
SOIL SAMPLE LOCATIONS
REMUDA BASIN CENTRAL TANK BATTERY
UNIT F SEC 19 T23S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918152_REMUDA BAISN CENTRAL TANK BATTERY\012918152_FIG02_SITE_2018_4958_NO DATA.mxd

TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA BASIN CENTRAL TANK BATTERY
REMEDIATION PERMIT NUMBER 2RP-4958
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)
FS01	3	11/08/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	462	52.7	462	**515**	514
FS02	3	11/08/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	32.5	<15.0	32.5	32.5	86.9
FS03	3	11/09/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	20.5	<15.0	20.5	20.5	403
FS04	3	11/09/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	475	48.1	475	**523**	**1,420**
FS05	3	11/09/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	314	38.0	314	**352**	**1,990**
FS06	6	11/09/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	1,650	56.2	1,650	**1,710**	**1,020**
SW01	3	11/09/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	845	91.6	845	**937**	464
SW02	3	11/09/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	26.0	2,540	44.6	2,570	**2,610**	**4,090**
SW03	3	11/09/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	20.9	<14.9	20.9	20.9	**824**
SW04	3	11/09/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	171	24.6	171	**196**	**1,540**
SW05	3	11/09/2018	<0.00202	<0.00202	<0.00202	0.00321	0.00321	<15.0	142	17.1	142	**159**	**4,180**
SW06	3	11/09/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	**1,090**
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	NE	100	600

Notes:
bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
mg/kg - milligrams per kilogram
NE - not established
NMOCD - New Mexico Oil Conservation Division
DRO - diesel range organics
GRO - gasoline range organics
ORO - oil range organics
TPH - total petroleum hydrocarbons
< - indicates result is below laboratory reporting limits
Bold - indicates result exceeds the applicable regulatory standard.

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	NMAP1825437863
District RP	2RP-4958
Facility ID	N/A
Application ID	pMAP1824961831

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

Location of Release Source

Latitude 32.290595 Longitude -103.92319
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Remuda Basin Central Tank Battery	Site Type Bulk Storage Facility
Date Release Discovered 8/21/2018	API# *(if applicable)* 30-015-28422 (Remuda Basin State 01Q)

Unit Letter	Section	Township	Range	County
F	19	23S	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) 1	Volume Recovered (bbls) 1
☒ Produced Water	Volume Released (bbls) 54	Volume Recovered (bbls) 49
	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

A fuse burned out and caused the high level alarm at the battery to fail. The transfer pump did not receive the signal to turn on and a tank overflowed into the earthen containment surrounding the tanks. Vacuum trucks were dispatched and recovered all standing fluid. An environmental contractor will be retained to assist with remediation efforts.

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1825437863
District RP	2RP-4958
Facility ID	N/A
Application ID	pMAP1824961831

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? This is 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)?
Yes, notice was provided by Jacob Foust to Mike Bratcher/Maria Pruett of the OCD and Ryan Mann of the SLO on 8/21/2018 at 10:58 am 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:

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: 9/4/2018

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

OCD Only

Received by: Date: 09/06/18

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1825437863
District RP	2RP-4958
Facility ID	N/A
Application ID	pMAP1824961831

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?	<50 (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	NMAP1825437863
District RP	2RP-4958
Facility ID	N/A
Application ID	pMAP1824961831

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: 11/19/2018

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

OCD Only

Received by: _____ Date**:** _____

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1825437863
District RP	2RP-4958
Facility ID	N/A
Application ID	pMAP1824961831

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: 11/19/2018

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 605309

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Remuda Basin CTB

15-NOV-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)

15-NOV-18

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

Reference: XENCO Report No(s): **605309**
Remuda Basin CTB
Project Address: Carlsbad, NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 605309. 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. 605309 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

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 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	11-08-18 11:18	3	605309-001
FS02	S	11-08-18 11:35	3	605309-002
SW01	S	11-09-18 08:32	3	605309-003
SW02	S	11-09-18 08:37	3	605309-004
SW03	S	11-09-18 09:26	3	605309-005
FS03	S	11-09-18 09:27	3	605309-006
FS04	S	11-09-18 09:38	3	605309-007
SW04	S	11-09-18 15:35	3	605309-008
SW05	S	11-09-18 15:36	3	605309-009
SW06	S	11-09-18 15:38	3	605309-010
FS05	S	11-09-18 15:40	3	605309-011
FS06	S	11-09-18 15:41	6	605309-012
FS01	S	11-08-18 11:18	3	Not Analyzed
FS01	S	11-08-18 11:18	3	Not Analyzed

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin CTB

Project ID:
Work Order Number(s): *605309*

Report Date: *15-NOV-18*
Date Received: *11/13/2018*

Sample receipt non conformances and comments:

Per clients email request, corrected sample names for sample 001,002,006,007,011, and 012. New Version Generated. JKR 11/14/18
Per clients email request, additional sample name corrections for samples 003, 004, 005, 008, 009, 010. New version generated. JKR 11/15/18

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3069560 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 605309-002.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 605309-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 605309-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.
The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 605309

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin CTB

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

Date Received in Lab: Tue Nov-13-18 01:55 pm
Report Date: 15-NOV-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	605309-001		605309-002		605309-003		605309-004		605309-005		605309-006	
	Field Id:	FS01		FS02		SW01		SW02		SW03		FS03	
	Depth:	3-		3-		3-		3-		3-		3-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-08-18 11:18		Nov-08-18 11:35		Nov-09-18 08:32		Nov-09-18 08:37		Nov-09-18 09:26		Nov-09-18 09:27	
BTEX by EPA 8021B	***Extracted:***	Nov-13-18 17:15		Nov-13-18 17:15		Nov-13-18 17:15		Nov-13-18 17:15		Nov-13-18 17:15		Nov-13-18 17:15	
	Analyzed:	Nov-13-18 19:26		Nov-13-18 19:47		Nov-13-18 20:09		Nov-13-18 20:40		Nov-13-18 21:15		Nov-13-18 23:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00198	0.00198	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Toluene		<0.00198	0.00198	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Ethylbenzene		<0.00198	0.00198	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
m,p-Xylenes		<0.00397	0.00397	<0.00403	0.00403	<0.00398	0.00398	<0.00399	0.00399	<0.00401	0.00401	<0.00396	0.00396
o-Xylene		<0.00198	0.00198	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Total Xylenes		<0.00198	0.00198	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Total BTEX		<0.00198	0.00198	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Inorganic Anions by EPA 300	***Extracted:***	Nov-13-18 16:30		Nov-13-18 16:30		Nov-13-18 16:30		Nov-13-18 16:30		Nov-13-18 16:30		Nov-13-18 16:30	
	Analyzed:	Nov-13-18 18:25		Nov-14-18 10:07		Nov-13-18 18:36		Nov-13-18 18:41		Nov-13-18 18:57		Nov-13-18 19:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		514	49.8	86.9	4.95	464	49.6	4090	99.2	824	49.5	403	49.5
TPH by SW8015 Mod	***Extracted:***	Nov-13-18 15:00		Nov-13-18 15:00		Nov-13-18 15:00		Nov-13-18 15:00		Nov-13-18 15:00		Nov-13-18 15:00	
	Analyzed:	Nov-13-18 16:41		Nov-13-18 18:34		Nov-13-18 18:52		Nov-14-18 08:29		Nov-13-18 19:30		Nov-13-18 19:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	26.0	15.0	<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)		462	15.0	32.5	15.0	845	15.0	2540	15.0	20.9	14.9	20.5	15.0
Motor Oil Range Hydrocarbons (MRO)		52.7	15.0	<15.0	15.0	91.6	15.0	44.6	15.0	<14.9	14.9	<15.0	15.0
Total TPH		515	15.0	32.5	15.0	937	15.0	2610	15.0	20.9	14.9	20.5	15.0

Certificate of Analysis Summary 605309

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin CTB

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

Date Received in Lab: Tue Nov-13-18 01:55 pm
Report Date: 15-NOV-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	605309-007		605309-008		605309-009		605309-010		605309-011		605309-012	
	Field Id:	FS04		SW04		SW05		SW06		FS05		FS06	
	Depth:	3-		3-		3-		3-		3-		6-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-18 09:38		Nov-09-18 15:35		Nov-09-18 15:36		Nov-09-18 15:38		Nov-09-18 15:40		Nov-09-18 15:41	
BTEX by EPA 8021B	***Extracted:***	Nov-13-18 17:15		Nov-13-18 17:15		Nov-13-18 17:15		Nov-13-18 17:15		Nov-13-18 17:15		Nov-13-18 17:15	
	Analyzed:	Nov-14-18 00:04		Nov-14-18 00:54		Nov-14-18 01:21		Nov-14-18 01:50		Nov-14-18 03:15		Nov-14-18 03:41	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
m,p-Xylenes		<0.00401	0.00401	<0.00402	0.00402	<0.00404	0.00404	<0.00398	0.00398	<0.00398	0.00398	<0.00401	0.00401
o-Xylene		<0.00200	0.00200	<0.00201	0.00201	0.00321	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201	0.00321	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00201	0.00201	0.00321	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Inorganic Anions by EPA 300	***Extracted:***	Nov-13-18 16:30		Nov-13-18 16:30		Nov-13-18 16:30		Nov-13-18 16:30		Nov-13-18 16:30		Nov-13-18 16:30	
	Analyzed:	Nov-13-18 19:08		Nov-13-18 19:13		Nov-13-18 19:18		Nov-13-18 19:39		Nov-13-18 19:45		Nov-13-18 20:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1420	50.0	1540	100	4180	99.2	1090	49.5	1990	99.0	1020	49.5
TPH by SW8015 Mod	***Extracted:***	Nov-13-18 15:00		Nov-13-18 15:00		Nov-13-18 15:00		Nov-13-18 15:00		Nov-13-18 15:00		Nov-13-18 15:00	
	Analyzed:	Nov-13-18 20:08		Nov-13-18 20:28		Nov-13-18 20:47		Nov-13-18 21:06		Nov-13-18 22:04		Nov-13-18 22:24	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Diesel Range Organics (DRO)		475	15.0	171	15.0	142	15.0	<15.0	15.0	314	15.0	1650	14.9
Motor Oil Range Hydrocarbons (MRO)		48.1	15.0	24.6	15.0	17.1	15.0	<15.0	15.0	38.0	15.0	56.2	14.9
Total TPH		523	15.0	196	15.0	159	15.0	<15.0	15.0	352	15.0	1710	14.9

Certificate of Analytical Results 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-001	Date Collected:	11.08.18 11.18	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**514**	49.8	mg/kg	11.13.18 18.25		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.13.18 16.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	**462**	15.0	mg/kg	11.13.18 16.41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**52.7**	15.0	mg/kg	11.13.18 16.41		1
Total TPH	PHC635	**515**	15.0	mg/kg	11.13.18 16.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	11.13.18 16.41	
o-Terphenyl	84-15-1	93	%	70-135	11.13.18 16.41	

Certificate of Analytical Results 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-001	Date Collected:	11.08.18 11.18	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.13.18 19.26	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.13.18 19.26	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.13.18 19.26	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.13.18 19.26	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.13.18 19.26	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.13.18 19.26	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.13.18 19.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	124	%	70-130	11.13.18 19.26	
4-Bromofluorobenzene	460-00-4	71	%	70-130	11.13.18 19.26	

Certificate of Analytical Results 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-002	Date Collected:	11.08.18 11.35	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**86.9**	4.95	mg/kg	11.14.18 10.07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.13.18 18.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	**32.5**	15.0	mg/kg	11.13.18 18.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.13.18 18.34	U	1
Total TPH	PHC635	**32.5**	15.0	mg/kg	11.13.18 18.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	11.13.18 18.34	
o-Terphenyl	84-15-1	92	%	70-135	11.13.18 18.34	

Certificate of Analytical Results 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-002	Date Collected:	11.08.18 11.35	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.13.18 19.47	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.13.18 19.47	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.13.18 19.47	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.13.18 19.47	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.13.18 19.47	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.13.18 19.47	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.13.18 19.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	70-130	11.13.18 19.47	
4-Bromofluorobenzene	460-00-4	67	%	70-130	11.13.18 19.47	**

Certificate of Analytical Results 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-003	Date Collected:	11.09.18 08.32	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**464**	49.6	mg/kg	11.13.18 18.36		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.13.18 18.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	**845**	15.0	mg/kg	11.13.18 18.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**91.6**	15.0	mg/kg	11.13.18 18.52		1
Total TPH	PHC635	**937**	15.0	mg/kg	11.13.18 18.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	11.13.18 18.52	
o-Terphenyl	84-15-1	105	%	70-135	11.13.18 18.52	

Certificate of Analytical Results 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-003	Date Collected:	11.09.18 08.32	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.13.18 20.09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.13.18 20.09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.13.18 20.09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.13.18 20.09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.13.18 20.09	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.13.18 20.09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.13.18 20.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	70	%	70-130	11.13.18 20.09	
1,4-Difluorobenzene	540-36-3	97	%	70-130	11.13.18 20.09	

Certificate of Analytical Results 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-004	Date Collected:	11.09.18 08.37	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4090**	99.2	mg/kg	11.13.18 18.41		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**26.0**	15.0	mg/kg	11.14.18 08.29		1
Diesel Range Organics (DRO)	C10C28DRO	**2540**	15.0	mg/kg	11.14.18 08.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**44.6**	15.0	mg/kg	11.14.18 08.29		1
Total TPH	PHC635	**2610**	15.0	mg/kg	11.14.18 08.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.14.18 08.29	
o-Terphenyl	84-15-1	108	%	70-135	11.14.18 08.29	

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LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-004	Date Collected:	11.09.18 08.37	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.13.18 20.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.13.18 20.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.13.18 20.40	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.13.18 20.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.13.18 20.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.13.18 20.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.13.18 20.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	77	%	70-130	11.13.18 20.40	
1,4-Difluorobenzene	540-36-3	118	%	70-130	11.13.18 20.40	

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LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-005	Date Collected:	11.09.18 09.26	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**824**	49.5	mg/kg	11.13.18 18.57		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	11.13.18 19.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	**20.9**	14.9	mg/kg	11.13.18 19.30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	11.13.18 19.30	U	1
Total TPH	PHC635	**20.9**	14.9	mg/kg	11.13.18 19.30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.13.18 19.30	
o-Terphenyl	84-15-1	92	%	70-135	11.13.18 19.30	

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Remuda Basin CTB

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-005	Date Collected:	11.09.18 09.26	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.13.18 21.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.13.18 21.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.13.18 21.15	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.13.18 21.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.13.18 21.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.13.18 21.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.13.18 21.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.13.18 21.15	
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.13.18 21.15	

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Remuda Basin CTB

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-006	Date Collected:	11.09.18 09.27	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**403**	49.5	mg/kg	11.13.18 19.02		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.13.18 19.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	**20.5**	15.0	mg/kg	11.13.18 19.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.13.18 19.49	U	1
Total TPH	PHC635	**20.5**	15.0	mg/kg	11.13.18 19.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	11.13.18 19.49	
o-Terphenyl	84-15-1	92	%	70-135	11.13.18 19.49	

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Remuda Basin CTB

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-006	Date Collected:	11.09.18 09.27	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.13.18 23.21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.13.18 23.21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.13.18 23.21	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.13.18 23.21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.13.18 23.21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.13.18 23.21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.13.18 23.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	72	%	70-130	11.13.18 23.21	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.13.18 23.21	

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Remuda Basin CTB

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-007	Date Collected:	11.09.18 09.38	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1420**	50.0	mg/kg	11.13.18 19.08		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.13.18 20.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	**475**	15.0	mg/kg	11.13.18 20.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**48.1**	15.0	mg/kg	11.13.18 20.08		1
Total TPH	PHC635	**523**	15.0	mg/kg	11.13.18 20.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	11.13.18 20.08	
o-Terphenyl	84-15-1	94	%	70-135	11.13.18 20.08	

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Remuda Basin CTB

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-007	Date Collected:	11.09.18 09.38	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.14.18 00.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.14.18 00.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.14.18 00.04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.14.18 00.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.14.18 00.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.14.18 00.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.14.18 00.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	74	%	70-130	11.14.18 00.04	
1,4-Difluorobenzene	540-36-3	121	%	70-130	11.14.18 00.04	

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Remuda Basin CTB

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-008	Date Collected:	11.09.18 15.35	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1540**	100	mg/kg	11.13.18 19.13		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.13.18 20.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	**171**	15.0	mg/kg	11.13.18 20.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**24.6**	15.0	mg/kg	11.13.18 20.28		1
Total TPH	PHC635	**196**	15.0	mg/kg	11.13.18 20.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	11.13.18 20.28	
o-Terphenyl	84-15-1	94	%	70-135	11.13.18 20.28	

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LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-008	Date Collected:	11.09.18 15.35	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.14.18 00.54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.14.18 00.54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.14.18 00.54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.14.18 00.54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.14.18 00.54	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.14.18 00.54	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.14.18 00.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.14.18 00.54	
4-Bromofluorobenzene	460-00-4	80	%	70-130	11.14.18 00.54	

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Remuda Basin CTB

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-009	Date Collected:	11.09.18 15.36	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4180**	99.2	mg/kg	11.13.18 19.18		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.13.18 20.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	**142**	15.0	mg/kg	11.13.18 20.47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**17.1**	15.0	mg/kg	11.13.18 20.47		1
Total TPH	PHC635	**159**	15.0	mg/kg	11.13.18 20.47		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	11.13.18 20.47	
o-Terphenyl	84-15-1	89	%	70-135	11.13.18 20.47	

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Remuda Basin CTB

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-009	Date Collected:	11.09.18 15.36	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.14.18 01.21	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.14.18 01.21	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.14.18 01.21	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.14.18 01.21	U	1
o-Xylene	95-47-6	**0.00321**	0.00202	mg/kg	11.14.18 01.21		1
Total Xylenes	1330-20-7	**0.00321**	0.00202	mg/kg	11.14.18 01.21		1
Total BTEX		**0.00321**	0.00202	mg/kg	11.14.18 01.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	126	%	70-130	11.14.18 01.21	
4-Bromofluorobenzene	460-00-4	79	%	70-130	11.14.18 01.21	

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Remuda Basin CTB

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-010	Date Collected:	11.09.18 15.38	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1090**	49.5	mg/kg	11.13.18 19.39		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.13.18 21.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.13.18 21.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.13.18 21.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.13.18 21.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	11.13.18 21.06	
o-Terphenyl	84-15-1	88	%	70-135	11.13.18 21.06	

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Remuda Basin CTB

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-010	Date Collected:	11.09.18 15.38	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.14.18 01.50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.14.18 01.50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.14.18 01.50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.14.18 01.50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.14.18 01.50	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.14.18 01.50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.14.18 01.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	11.14.18 01.50	
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.14.18 01.50	

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Remuda Basin CTB

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-011	Date Collected:	11.09.18 15.40	Sample Depth:	3

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1990**	99.0	mg/kg	11.13.18 19.45		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.13.18 22.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	**314**	15.0	mg/kg	11.13.18 22.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**38.0**	15.0	mg/kg	11.13.18 22.04		1
Total TPH	PHC635	**352**	15.0	mg/kg	11.13.18 22.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	11.13.18 22.04	
o-Terphenyl	84-15-1	92	%	70-135	11.13.18 22.04	

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LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-011	Date Collected:	11.09.18 15.40	Sample Depth:	3
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.14.18 03.15	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.14.18 03.15	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.14.18 03.15	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.14.18 03.15	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.14.18 03.15	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.14.18 03.15	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.14.18 03.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	73	%	70-130	11.14.18 03.15	
1,4-Difluorobenzene	540-36-3	116	%	70-130	11.14.18 03.15	

Certificate of Analytical Results 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-012	Date Collected:	11.09.18 15.41	Sample Depth:	6

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.13.18 16.30	Basis:	Wet Weight
Seq Number:	3069555				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1020**	49.5	mg/kg	11.13.18 20.01		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.13.18 15.00	Basis:	Wet Weight
Seq Number:	3069549				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	11.13.18 22.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	**1650**	14.9	mg/kg	11.13.18 22.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**56.2**	14.9	mg/kg	11.13.18 22.24		1
Total TPH	PHC635	**1710**	14.9	mg/kg	11.13.18 22.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	11.13.18 22.24	
o-Terphenyl	84-15-1	108	%	70-135	11.13.18 22.24	

Certificate of Analytical Results 605309

LT Environmental, Inc., Arvada, CO

Remuda Basin CTB

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	11.13.18 13.55
Lab Sample Id:	605309-012	Date Collected:	11.09.18 15.41	Sample Depth:	6
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.13.18 17.15	Basis:	Wet Weight
Seq Number:	3069560				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.14.18 03.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.14.18 03.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.14.18 03.41	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.14.18 03.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.14.18 03.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.14.18 03.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.14.18 03.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	124	%	70-130	11.14.18 03.41	
4-Bromofluorobenzene	460-00-4	79	%	70-130	11.14.18 03.41	

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 605309

LT Environmental, Inc.

Remuda Basin CTB

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3069555 Matrix: Solid Date Prep: 11.13.18
MB Sample Id: 7666092-1-BLK LCS Sample Id: 7666092-1-BKS LCSD Sample Id: 7666092-1-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	255	102	255	102	90-110	0	20	mg/kg	11.13.18 17:59	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3069555 Matrix: Soil Date Prep: 11.13.18
Parent Sample Id: 605310-002 MS Sample Id: 605310-002 S MSD Sample Id: 605310-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	43.7	250	306	105	309	106	90-110	1	20	mg/kg	11.13.18 18:15	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3069555 Matrix: Soil Date Prep: 11.13.18
Parent Sample Id: 605310-003 MS Sample Id: 605310-003 S MSD Sample Id: 605310-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	130	250	363	93	360	92	90-110	1	20	mg/kg	11.13.18 19:29	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3069549 Matrix: Solid Date Prep: 11.13.18
MB Sample Id: 7666090-1-BLK LCS Sample Id: 7666090-1-BKS LCSD Sample Id: 7666090-1-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	938	94	959	96	70-135	2	20	mg/kg	11.13.18 16:04	
Diesel Range Organics (DRO)	<8.13	1000	988	99	1010	101	70-135	2	20	mg/kg	11.13.18 16:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		123		126		70-135	%	11.13.18 16:04
o-Terphenyl	102		99		103		70-135	%	11.13.18 16:04

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 605309

LT Environmental, Inc.

Remuda Basin CTB

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3069549 Matrix: Soil Date Prep: 11.13.18
Parent Sample Id: 605309-001 MS Sample Id: 605309-001 S MSD Sample Id: 605309-001 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	851	85	848	85	70-135	0	20	mg/kg	11.13.18 17:00	
Diesel Range Organics (DRO)	462	999	1330	87	1340	88	70-135	1	20	mg/kg	11.13.18 17:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		103		70-135	%	11.13.18 17:00
o-Terphenyl	94		89		70-135	%	11.13.18 17:00

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3069560 Matrix: Solid Date Prep: 11.13.18
MB Sample Id: 7666096-1-BLK LCS Sample Id: 7666096-1-BKS LCSD Sample Id: 7666096-1-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	0.122	122	0.115	114	70-130	6	35	mg/kg	11.13.18 16:57	
Toluene	<0.00200	0.100	0.105	105	0.0991	98	70-130	6	35	mg/kg	11.13.18 16:57	
Ethylbenzene	<0.00200	0.100	0.122	122	0.116	115	70-130	5	35	mg/kg	11.13.18 16:57	
m,p-Xylenes	<0.00401	0.200	0.245	123	0.246	122	70-130	0	35	mg/kg	11.13.18 16:57	
o-Xylene	<0.00200	0.100	0.122	122	0.117	116	70-130	4	35	mg/kg	11.13.18 16:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		107		95		70-130	%	11.13.18 16:57
4-Bromofluorobenzene	70		91		81		70-130	%	11.13.18 16:57

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3069560 Matrix: Soil Date Prep: 11.13.18
Parent Sample Id: 605309-001 MS Sample Id: 605309-001 S MSD Sample Id: 605309-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00488	0.244	0.0521	21	0.0466	47	70-130	11	35	mg/kg	11.13.18 18:00	X
Toluene	<0.00488	0.244	0.0358	15	0.0335	34	70-130	7	35	mg/kg	11.13.18 18:00	X
Ethylbenzene	<0.00488	0.244	0.0339	14	0.0321	32	70-130	5	35	mg/kg	11.13.18 18:00	X
m,p-Xylenes	<0.00247	0.488	0.0601	12	0.0579	29	70-130	4	35	mg/kg	11.13.18 18:00	X
o-Xylene	<0.00488	0.244	0.0317	13	0.0308	31	70-130	3	35	mg/kg	11.13.18 18:00	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		110		70-130	%	11.13.18 18:00
4-Bromofluorobenzene	73		76		70-130	%	11.13.18 18:00

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

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

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

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

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Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

CHAIN OF CUSTODY

Page 1 of 2

Xenco Quote #: | Xenco Job #: 605309

Client / Reporting Information

Company Name / Branch: Ltenvironmental, Inc. Permian Office
Company Address: 3300 N A St. Building 1 Unit 103 Midland, TX 79705
Email: abaker@ltenv.com
Phone No: (432) 704-5178
Project Contact: Adrian Baker
Samplers's Name

Project Information

Project Name/Number: RENEGA BASIN CTB
Project Location: CARLSBAD, NM
Invoice To: XTO ENERGY/KYLE LITTRELL
PO Number:

Analytical Information

BTEX (8021)
TPH (8015)
Chloride (300.0)

Matrix Codes

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

No.	Field ID / Point of Collection	Sample Depth	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	S-1	3	11/6/18	1118	S	1								X	
2	S-2			1135										X	
3	SW-1		11/7/18	0932										X	
4	SW-2			0937										X	
5	SW-3			0926										X	
6	S-4			0925										X	
7	S-5			0938										X	
8	SW-5			1535										X	
9	SW-6			1536										X	
10	SW-7			1532										X	

Number of preserved bottles

Turnaround Time (Business days)

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

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

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level III Std QC+ Forms
- [ ] Level 3 (CLP Forms)
- [ ] TRRP Checklist
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] TRRP Level IV
- [ ] UST / RG -411

Notes:

FED-EX / UPS: Tracking # 773706936762

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

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	11/12/1800	2	2	11/12 1530	2 11/13/18
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4 0835
Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice: Y
5		5			Cooler Temp. 0.3 Thermo. Corr. Factor 0.0

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

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Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

CHAIN OF CUSTODY

Xenco Quote #: | Xenco Job #: 605389

Client / Reporting Information

Company Name / Branch: LT Environmental, Inc. Permian Office
Company Address: 3300 N A St. Building 1 Unit 103 Midland, TX 79705
Email: abaker@ltenv.com Phone No: (432)704-5178
Project Contact: Adrian Baker
Samplers's Name

Project Information

Project Name/Number: REMUDA BASIN CTB
Project Location: CARLSBAD, NM
Invoice To: XTO ENERGY KYLE LITTRELL
PO Number:

Analytical Information

BTEX (8021)
TPH (8015)
CHLORIDE (300.0)

Matrix Codes

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

No.	Field ID / Point of Collection	Sample Depth	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	S-6	3	11/9/18	1540	S	1								X	
2	S-7	6	"	1541	"	1								X	
3														X	
4															
5															
6															
7															
8															
9															
10															

Number of preserved bottles

Turnaround Time (Business days)

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

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

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level III Std QC+ Forms
- [ ] Level 3 (CLP Forms)
- [ ] TRRP Checklist
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] TRRP Level IV
- [ ] UST / RG -411

Notes:

FED-EX / UPS: Tracking #

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

Relinquished by Sampler: 1	Date Time: 11/12/18 1250	Received By: 1	Relinquished By: 2	Date Time: 11/12 1530	Received By: 2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor

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

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/13/2018 01:55:00 PM

Work Order #: 605309

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3
#2 *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: 11/13/2018

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 11/14/2018

Jessica Kramer

Visual staining in the tank berm before excavation – view east toward tank battery.

Project: Remuda Basin CTB	XTO Energy, Inc.	LTE Advancing Opportunity
October 28, 2018	Photographic Log	

Soil staining in southwest corner of well pad prior to excavation – view south

Project: Remuda Basin CTB	XTO Energy, Inc.	LTE Advancing Opportunity
October 28, 2018	Photographic Log	

Staining near the discharge pump prior to excavation – view west

Project: Remuda Basin CTB	XTO Energy, Inc.	LTE Advancing Opportunity
October 28, 2018	Photographic Log	

Stained soil near the separator prior to excavation – view west

Project: Remuda Basin CTB	XTO Energy, Inc.	LTE Advancing Opportunity
October 28, 2018	Photographic Log	

Soil staining on west side of well pad prior to excavation – view north

Project: Remuda Basin CTB	XTO Energy, Inc.	LTE Advancing Opportunity
November 4, 2018	Photographic Log	

Excavation and view of bedrock removal – view west

Project: Remuda Basin CTB	XTO Energy, Inc.	LTE Advancing Opportunity
November 9, 2018	Photographic Log	

Excavation and view of bedrock in place – view south

Project: Remuda Basin CTB	XTO Energy, Inc.	LTE Advancing Opportunity
November 9, 2018	Photographic Log	