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

March 22, 2019

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

RE: Closure Request
Shocker 32 State Com #3H Battery
Remediation Permit Number 2RP-5136
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing excavation of impacted soil and confirmation soil sampling activities at the Shocker 32 State Com #3H Battery (Site) located in Unit A, Section 32, Township 25 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the excavation and soil sampling activities was to address impacts to soil after a release of crude oil onto the surface of the well pad.

On December 14, 2018, a failed compressor caused equipment to overpressure and release approximately 0.5 barrels (bbls) of crude oil out of the flare stack. The oil that exited the flare stack ignited and caused a small fire on the well pad. The fire and released fluid remained on the well pad, and the fire extinguished itself. Vacuum trucks were used to recover approximately 0.1 bbls of crude oil from the well pad and the compressor was repaired. Approximately 1,600 square feet surrounding the flare stack in the southwest corner of the pad was affected by the release. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on December 20, 2018, and was assigned Remediation Permit (RP) Number 2RP-5136 (Attachment 1). Based on the excavation activities and results of the confirmation soil sampling events, XTO is requesting no further action for this release.

BACKGROUND

The release occurred after August 14, 2018; therefore, LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be between 50 and 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 320532104001701 25S.29E.32.21111, located approximately 0.34 miles west of the Site. The water well has a depth to groundwater of 98.13 feet and a total depth

of 128 feet. The water well is approximately 8 feet higher in elevation than the Site. The nearest continuously flowing water or significant watercourse is an unnamed dry wash located 0.34 miles east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. Based on these criteria, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and 10,000 mg/kg chloride.

PRELIMINARY SOIL SAMPLING ACTIVITIES

On December 27, 2018, LTE personnel inspected the Site to evaluate the release extent. Surface hydrocarbon staining was observed in the release area on the well pad. The release extent was mapped using a handheld Global Positing System (GPS) unit and is depicted on Figure 2. LTE personnel collected two preliminary soil samples (SS01 and SS02) within the release area from a depth of 0.5 feet bgs to assess the lateral extent of soil impacts. The soil samples were screened for volatile aromatic hydrocarbons and chloride using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

Laboratory analytical results for soil sample SS01 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Laboratory analytical results for soil sample SS02 indicated that GRO/DRO and TPH concentrations exceeded the NMOCD Table 1 closure criteria. Laboratory analytical results are presented on Figure 2 and summarized in Table 1 and the laboratory analytical report is included in Attachment 2. Based on the SS02 soil sample analytical results, excavation of impacted soil was required.

DELINEATION AND EXCAVATION SOIL SAMPLING ACTIVITIES

During March 2019, LTE personnel returned to the Site to delineate the impacted soil via potholing and oversee excavation of impacted soil as indicated by laboratory analytical results for preliminary soil sample SS02.

On March 7 and March 13, 2019, six potholes (PH01 through PH06) were advanced in the release area using a backhoe to delineate the lateral and vertical extent of impacted soil. Soil was field screened in each pothole using a PID and Hach® chloride QuanTab® test strips. Two soil samples

were collected from each pothole, PH01 through PH06. Soil samples were collected from depths of 0.5 feet and 1 foot bgs from potholes PH01, PH02, and PH04 through PH06 and soil samples were collected from depths of 0.5 feet and 1.5 feet bgs from pothole PH03. The pothole soil sample locations and depths are presented on Figure 3 and soil sample logs are included as Attachment 3.

On March 7, 2019, impacted soil was excavated to a depth of 1 foot bgs in the area around preliminary soil sample SS02. Following removal of impacted soil, LTE collected a 5-point composite soil sample (FS01) from the floor of the excavation from a depth of 1 foot bgs. The 5-point composite sample was collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the sample by thoroughly mixing. The excavation measured approximately 200 square feet in area and was completed to a depth of 1 foot bgs. Based on the shallow depth of the excavation, composite sample FS01 was representative of the sidewalls and floor of the excavation. The soil sample location and horizontal extent of the excavation are presented on Figure 4. The pothole and excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas.

Approximately 8 cubic yards of impacted soil were removed from the excavation. The impacted soil will be transported and properly disposed of at the R360 Red Bluff Landfill Facility, in Orla, Texas.

ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria in preliminary soil sample SS01 and all soil samples collected from potholes PH01 through PH06. Based on the laboratory analytical results, no excavation was required in these areas. Laboratory analytical results indicated that GRO/DRO and TPH concentrations exceeded the NMOCD Table 1 closure criteria in preliminary soil sample SS02. Impacted soil was excavated in the area around preliminary soil sample SS02 and laboratory analytical results for the subsequent excavation soil sample FS01 indicated that GRO/DRO concentrations continued to exceed the NMOCD Table 1 closure criteria.

Further excavation of impacted soil was limited by the active flare stack and pipelines. XTO safety policy restricts soil disturbing activities to a 2 foot radius of any on-site process equipment. This XTO safety policy is established to protect workers and to reduce the likelihood of compromising the foundation of the process equipment. This policy was enforced where impacted soil was identified within 2 feet of the active flare stack and pipelines. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

A total of approximately 8 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth moving activities within 2 feet of active process equipment. Laboratory analytical results for excavation soil sample FS01, collected from the final excavation extent, indicated that soil with GRO/DRO concentrations exceeding the NMOCD Table 1 closure criteria was left in place within 2 feet of the active flare stack and pipelines. An estimated 30 cubic yards of impacted soil remain in place, assuming a maximum 1.5 foot depth based on pothole soil samples PH01A through PH06A collected from 1 foot and 1.5 feet bgs that were compliant with the NMOCD Table 1 closure criteria.

XTO requests to backfill the existing excavation and complete remediation during any future major well pad construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. Free-standing fluids were recovered during initial response activities and no saturated soil remains in place. The impacted soil remaining in place in the southwest corner of the pad is delineated vertically and laterally by soil samples collected from potholes PH01 through PH06.

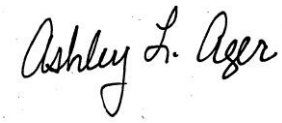
Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for release number 2RP-5136. Upon approval of this closure request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1. A photographic log of the Site is included as Attachment 4.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Adrian Baker
Project Geologist



Ashley L. Ager, P.G.
Senior Geologist

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

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Figure 4	Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-5136)
Attachment 2	Laboratory Analytical Reports
Attachment 3	Soil Sample Logs
Attachment 4	Photographic Log

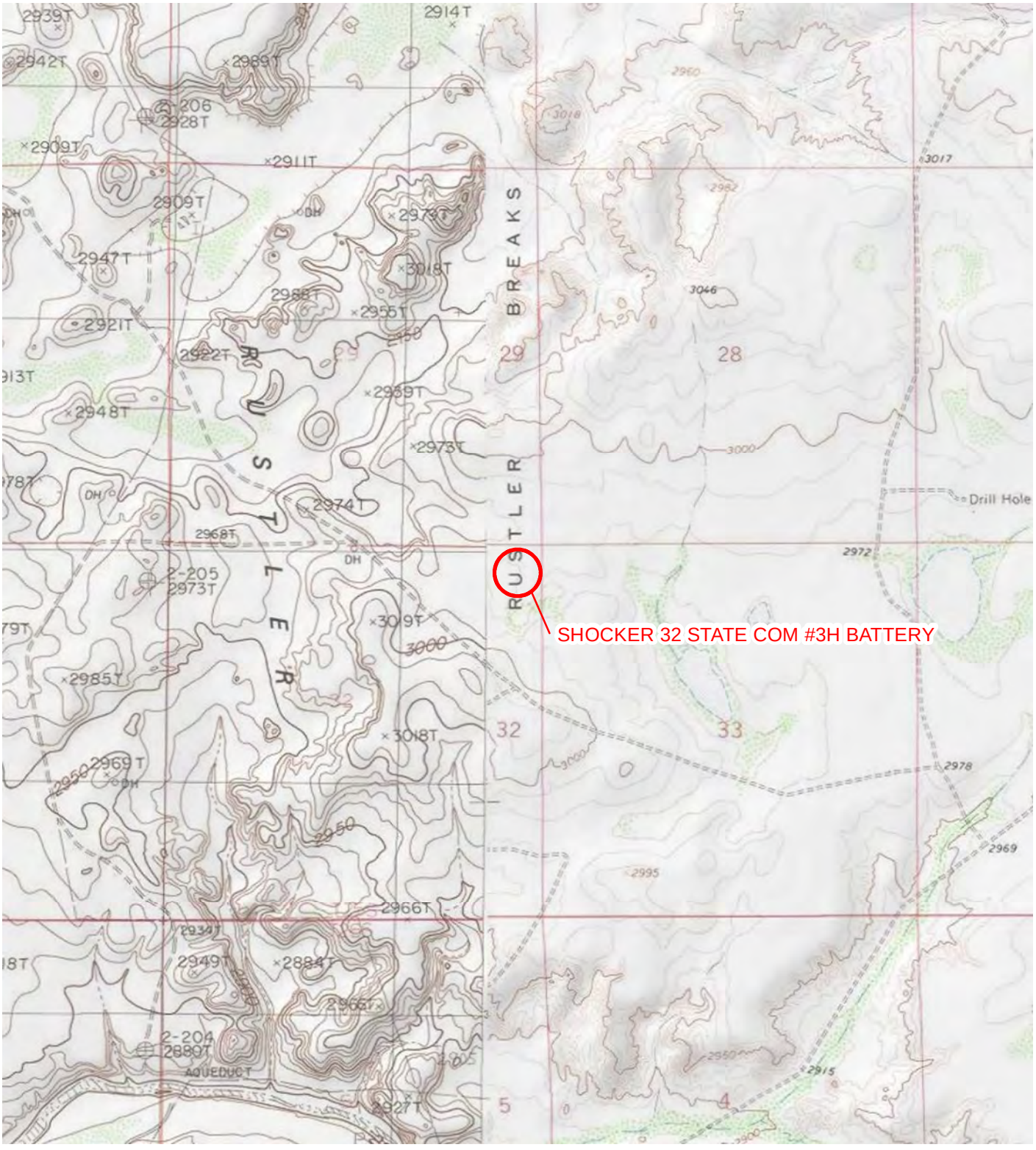


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-5136

FIGURE 1
SITE LOCATION MAP
SHOCKER 32 STATE COM #3H BATTERY
UNIT A SEC 32 T25S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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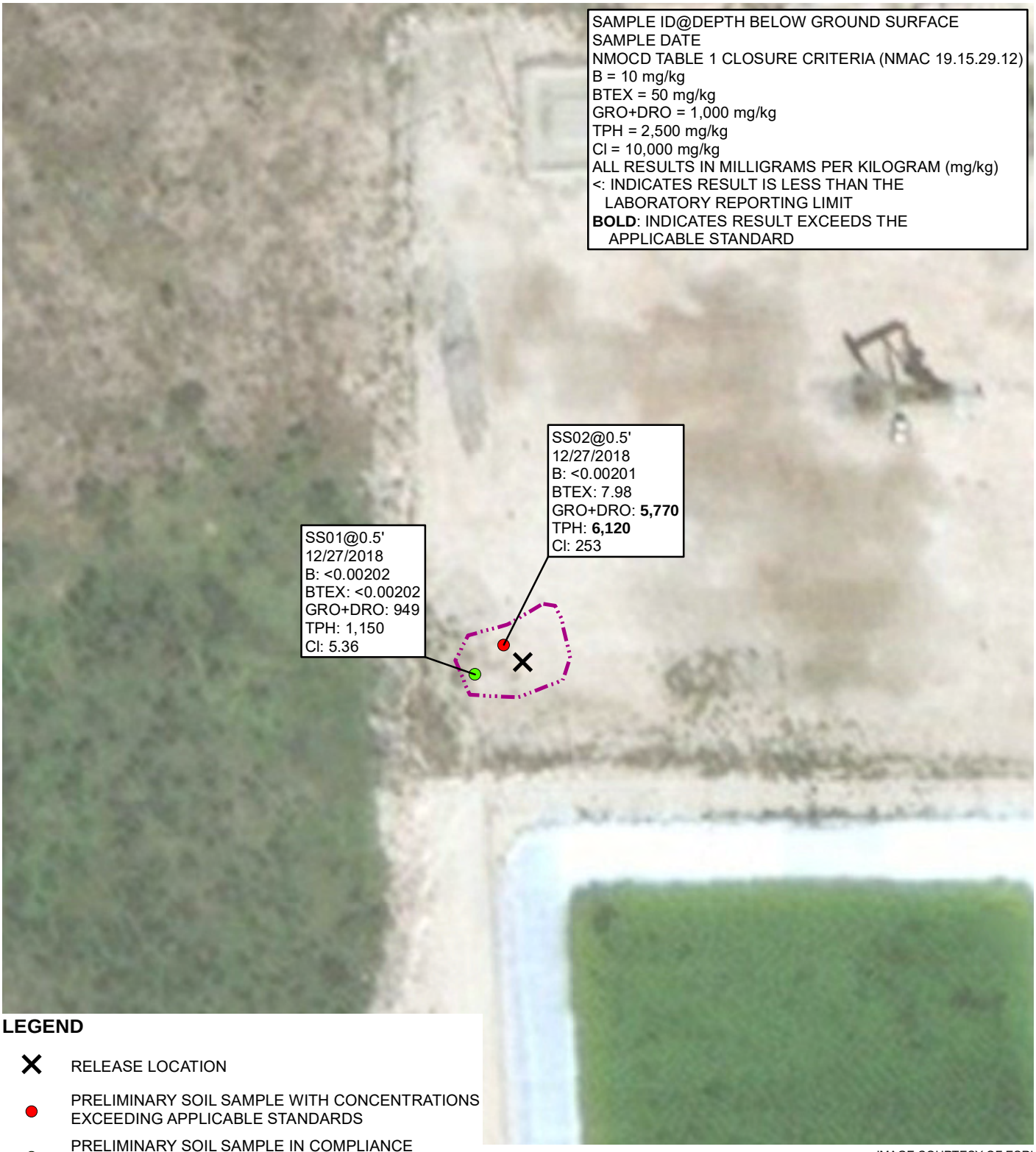


LEGEND

- RELEASE LOCATION
- PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- RELEASE EXTENT

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO – GASOLINE RANGE ORGANICS
DRO – DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5136

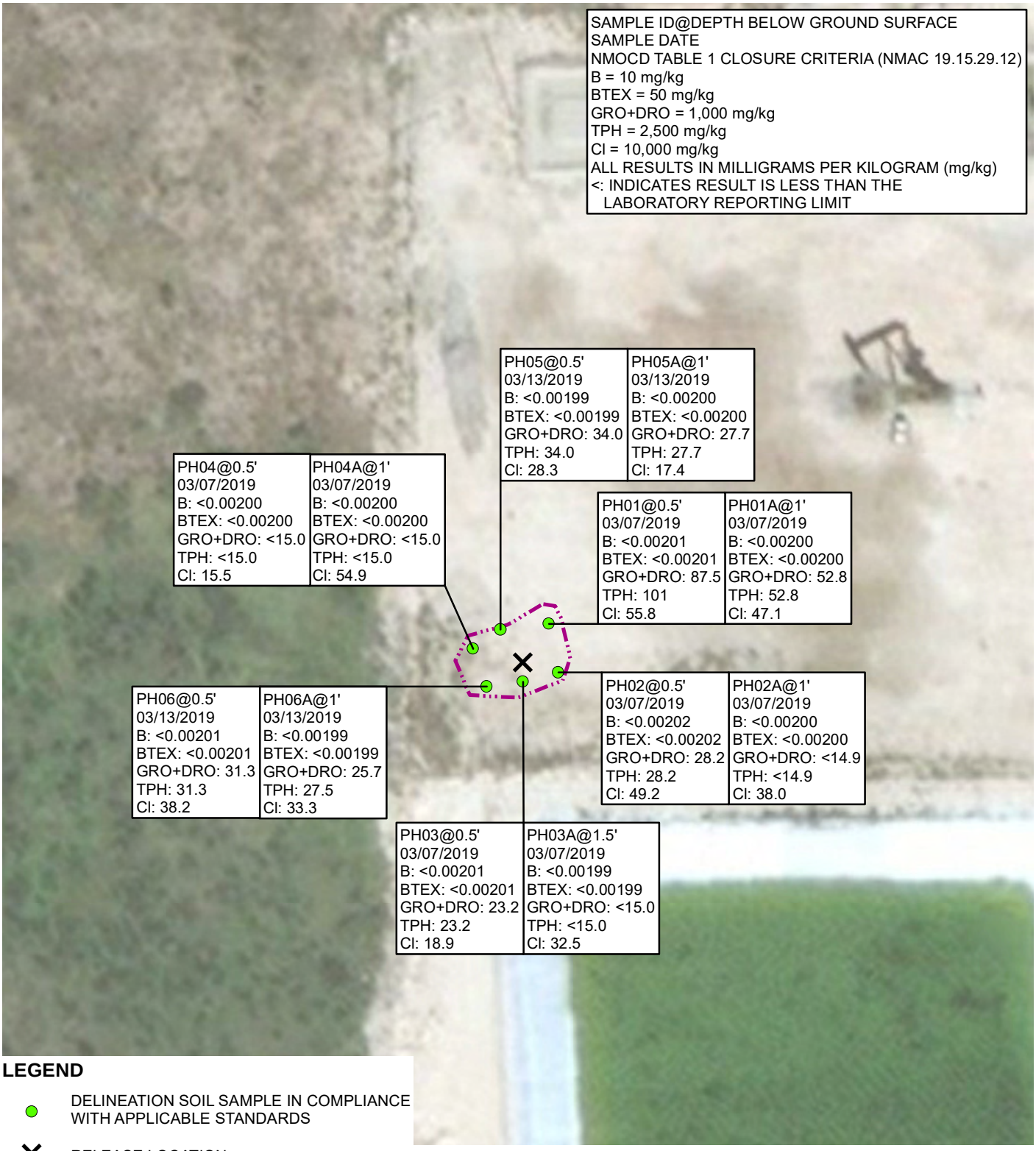
IMAGE COURTESY OF ESRI

0 60 120
Feet

N

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
SHOCKER 32 STATE COM #3H BATTERY
UNIT A SEC 32 T25S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918198_SHOCKER 32 STATE COM #3H BATTERY\012918198_FIG02_PRELIMINARY SS_2019_5136.mxd



LEGEND

- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- RELEASE LOCATION
- RELEASE EXTENT

IMAGE COURTESY OF ESRI

0 60 120
Feet

N

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO – GASOLINE RANGE ORGANICS
DRO – DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5136

FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
SHOCKER 32 STATE COM #3H BATTERY
UNIT A SEC 32 T25S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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LEGEND

- RELEASE LOCATION
- EXCAVATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- RELEASE EXTENT
- EXCAVATION EXTENT

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO – GASOLINE RANGE ORGANICS
DRO – DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5136

IMAGE COURTESY OF ESRI

0 60 120
Feet

N

FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS
SHOCKER 32 STATE COM #3H BATTERY
UNIT A SEC 32 T25S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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TABLE 1
SOIL ANALYTICAL RESULTS

SHOCKER 32 STATE COM #3H BATTERY
REMEDIATION PERMIT NUMBER 2RP-5136
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	12/27/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	949	204	949	1,150	5.36
SS02	0.5	12/27/2018	<0.0201	0.318	0.618	7.04	7.98	786	4,980	350	**5,770**	**6,120**	253
FS01	1	03/07/2019	<0.00200	<0.00200	<0.00200	0.0162	0.0162	42.9	1,130	141	**1,170**	1,310	11.4
PH01	0.5	03/07/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	85.7	15.1	85.7	101	55.8
PH01A	1	03/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	52.8	<15.0	52.8	52.8	47.1
PH02	0.5	03/07/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	28.2	<15.0	28.2	28.2	49.2
PH02A	1	03/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	38.0
PH03	0.5	03/07/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	23.2	<15.0	23.2	23.2	18.9
PH03A	1.5	03/07/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	32.5
PH04	0.5	03/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	15.5
PH04A	1	03/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	54.9
PH05	0.5	03/13/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	34.0	<15.0	34.0	34.0	28.3
PH05A	1	03/13/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	27.7	<15.0	27.7	27.7	17.4
PH06	0.5	03/13/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	31.3	<15.0	31.3	31.3	38.2
PH06A	1	03/13/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	25.7	<15.0	25.7	25.7	33.3
NMOCD Table 1 Closure Criteria			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
* - indicates sample was collected in area to be reclaimed after remediation is complete; closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018
NMAC - New Mexico Administrative Code

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

State of New Mexico
Energy Minerals and Natural Resources 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	NAB1836140880
District RP	2 2RP-5136
Facility ID	
Application ID	pAB1836140519

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)* NAB1836140880
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.092652 Longitude -103.998270

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Shocker 32 State Com #3H Battery	Site Type Bulk Storage and Separation Facility
Date Release Discovered 12/14/2018	API# *(if applicable)* 30-015-36220

Unit Letter	Section	Township	Range	County
A	32	25S	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)

☒ Crude Oil	Volume Released (bbls) 0.5	Volume Recovered (bbls) 0.1
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	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 small fire was reported at the facility flare due to a failed compressor. The failure caused equipment to load up and exit the flare where it ignited. The fire and fluids remained on the well pad, and the fire extinguished itself. There were no injuries. Free standing fluids were recovered and the compressor was repaired.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1836140880
District RP	2 2RP-5136
Facility ID	
Application ID	pAB1836140519

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume that results in a fire or is the result of a fire
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 Mike Bratcher, Jim Griswold (NMOCD), Ryan Mann (SLO), and Shelly Tucker (BLM) on 12/15/2018 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

☒ 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: [signature] Date: 12-20-18

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

OCD Only

Received by: [signature] Date: 12/27/2018

State of New Mexico
Oil Conservation Division

Incident ID	NAB1836140880
District RP	2 2RP-5136
Facility ID	
Application ID	pAB1836140519

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?	50-100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	NAB1836140880
District RP	2 2RP-5136
Facility ID	
Application ID	pAB1836140519

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: 12-20-18

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

OCD Only

Received by: Date: 12/27/2018

Location:	Shocker 32 St. Com 3 Btry (30-015-36220)	
Spill Date:	12/14/2018	

Length of Spill=	50.00	feet
Width of Spill=	18.00	feet
Saturation (or depth) of Spill=	1.00	inches
Approximate Oil %	100	
Porosity Factor=	0.03	
Volume Recovered=	0.10	bbls

VOLUME OF LEAK		
Total Oil=	0.5	barrels
Total Produced Water=	-	barrels

VOLUME RECOVERED

Total Oil=	0.1	barrels
Total Produced Water=	-	barrels

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5136
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: 3/22/2019

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

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAB1836140880
District RP	2RP-5136
Facility ID	
Application ID	pAB1836140519

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.***

[X] A scaled site and sampling diagram as described in 19.15.29.11 NMAC

[X] 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)

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

[X] Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 3/22/2019

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

OCD Only

Received by: Date:

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

Closure Approved by: Date:

Printed Name: Title:

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

Analytical Report 609962

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Shocker 32 State #3H

09-JAN-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

09-JAN-19

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

Reference: XENCO Report No(s): **609962**
Shocker 32 State #3H
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 609962. 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. 609962 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 609962

LT Environmental, Inc., Arvada, CO

Shocker 32 State #3H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	12-27-18 09:30	0.5 ft	609962-001
SS02	S	12-27-18 09:35	0.5 ft	609962-002

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3074729 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 609962-002.

Batch: LBA-3075244 TPH by SW8015 Mod
Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 609634-132 S,609634-132 SD,609962-002.

Certificate of Analysis Summary 609962

LT Environmental, Inc., Arvada, CO

Project Name: Shocker 32 State #3H

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

Date Received in Lab: Fri Dec-28-18 12:35 pm
Report Date: 09-JAN-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	609962-001		609962-002					
	Field Id:	SS01		SS02					
	Depth:	0.5- ft		0.5- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Dec-27-18 09:30		Dec-27-18 09:35					
BTEX by EPA 8021B	***Extracted:***	Jan-03-19 08:15		Jan-03-19 08:15					
	Analyzed:	Jan-03-19 13:56		Jan-03-19 14:17					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00202	0.00202	<0.0201	0.0201				
Toluene		<0.00202	0.00202	0.318	0.0201				
Ethylbenzene		<0.00202	0.00202	0.618	0.0201				
m,p-Xylenes		<0.00403	0.00403	4.94	0.0402				
o-Xylene		<0.00202	0.00202	2.10	0.0201				
Total Xylenes		<0.00202	0.00202	7.04	0.0201				
Total BTEX		<0.00202	0.00202	7.98	0.0201				
Inorganic Anions by EPA 300	***Extracted:***	Jan-04-19 14:30		Jan-04-19 14:30					
	Analyzed:	Jan-05-19 01:08		Jan-05-19 01:14					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		5.36	4.99	253	4.99				
TPH by SW8015 Mod	***Extracted:***	Jan-03-19 17:00		Jan-03-19 17:00					
	Analyzed:	Jan-08-19 15:15		Jan-08-19 15:34					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	786	15.0				
Diesel Range Organics (DRO)		949	15.0	4980	15.0				
Motor Oil Range Hydrocarbons (MRO)		204	15.0	350	15.0				
Total TPH		1150	15.0	6120	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 609962

LT Environmental, Inc., Arvada, CO

Shocker 32 State #3H

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	12.28.18 12.35
Lab Sample Id:	609962-001	Date Collected:	12.27.18 09.30	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.04.19 14.30	Basis:	Wet Weight
Seq Number:	3074919				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.36**	4.99	mg/kg	01.05.19 01.08		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.03.19 17.00	Basis:	Wet Weight
Seq Number:	3075244				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.08.19 15.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	**949**	15.0	mg/kg	01.08.19 15.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**204**	15.0	mg/kg	01.08.19 15.15		1
Total TPH	PHC635	**1150**	15.0	mg/kg	01.08.19 15.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	01.08.19 15.15	
o-Terphenyl	84-15-1	131	%	70-135	01.08.19 15.15	

Certificate of Analytical Results 609962

LT Environmental, Inc., Arvada, CO

Shocker 32 State #3H

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	12.28.18 12.35
Lab Sample Id:	609962-001	Date Collected:	12.27.18 09.30	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.03.19 08.15	Basis:	Wet Weight
Seq Number:	3074729				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.03.19 13.56	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.03.19 13.56	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.03.19 13.56	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.03.19 13.56	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.03.19 13.56	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.03.19 13.56	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.03.19 13.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	89	%	70-130	01.03.19 13.56	
4-Bromofluorobenzene	460-00-4	122	%	70-130	01.03.19 13.56	

Certificate of Analytical Results 609962

LT Environmental, Inc., Arvada, CO

Shocker 32 State #3H

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	12.28.18 12.35
Lab Sample Id:	609962-002	Date Collected:	12.27.18 09.35	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.04.19 14.30	Basis:	Wet Weight
Seq Number:	3074919				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**253**	4.99	mg/kg	01.05.19 01.14		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.03.19 17.00	Basis:	Wet Weight
Seq Number:	3075244				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**786**	15.0	mg/kg	01.08.19 15.34		1
Diesel Range Organics (DRO)	C10C28DRO	**4980**	15.0	mg/kg	01.08.19 15.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**350**	15.0	mg/kg	01.08.19 15.34		1
Total TPH	PHC635	**6120**	15.0	mg/kg	01.08.19 15.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	163	%	70-135	01.08.19 15.34	**
o-Terphenyl	84-15-1	187	%	70-135	01.08.19 15.34	**

Certificate of Analytical Results 609962

LT Environmental, Inc., Arvada, CO

Shocker 32 State #3H

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	12.28.18 12.35
Lab Sample Id:	609962-002	Date Collected:	12.27.18 09.35	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.03.19 08.15	Basis:	Wet Weight
Seq Number:	3074729				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0201	0.0201	mg/kg	01.03.19 14.17	U	10
Toluene	108-88-3	**0.318**	0.0201	mg/kg	01.03.19 14.17		10
Ethylbenzene	100-41-4	**0.618**	0.0201	mg/kg	01.03.19 14.17		10
m,p-Xylenes	179601-23-1	**4.94**	0.0402	mg/kg	01.03.19 14.17		10
o-Xylene	95-47-6	**2.10**	0.0201	mg/kg	01.03.19 14.17		10
Total Xylenes	1330-20-7	**7.04**	0.0201	mg/kg	01.03.19 14.17		10
Total BTEX		**7.98**	0.0201	mg/kg	01.03.19 14.17		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	246	%	70-130	01.03.19 14.17	**
1,4-Difluorobenzene	540-36-3	83	%	70-130	01.03.19 14.17	

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 609962

LT Environmental, Inc.

Shocker 32 State #3H

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3074919 Matrix: Solid Date Prep: 01.04.19
MB Sample Id: 7669225-1-BLK LCS Sample Id: 7669225-1-BKS LCSD Sample Id: 7669225-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	256	102	246	98	90-110	4	20	mg/kg	01.04.19 22:09	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3074919 Matrix: Soil Date Prep: 01.04.19
Parent Sample Id: 609961-004 MS Sample Id: 609961-004 S MSD Sample Id: 609961-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	619	250	825	82	808	76	90-110	2	20	mg/kg	01.04.19 23:57	X

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3074919 Matrix: Soil Date Prep: 01.04.19
Parent Sample Id: 610155-001 MS Sample Id: 610155-001 S MSD Sample Id: 610155-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	21.9	248	266	98	271	100	90-110	2	20	mg/kg	01.04.19 22:27	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3075244 Matrix: Solid Date Prep: 01.03.19
MB Sample Id: 7669440-1-BLK LCS Sample Id: 7669440-1-BKS LCSD Sample Id: 7669440-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	808	81	811	81	70-135	0	20	mg/kg	01.08.19 11:57	
Diesel Range Organics (DRO)	<8.11	998	889	89	889	89	70-135	0	20	mg/kg	01.08.19 11:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		109		108		70-135	%	01.08.19 11:57
o-Terphenyl	130		104		104		70-135	%	01.08.19 11:57

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 609962

LT Environmental, Inc.

Shocker 32 State #3H

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3075244 Matrix: Soil Date Prep: 01.03.19
Parent Sample Id: 609634-132 MS Sample Id: 609634-132 S MSD Sample Id: 609634-132 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	828	83	788	79	70-135	5	20	mg/kg	01.08.19 12:57	
Diesel Range Organics (DRO)	<8.13	1000	902	90	41300	4147	70-135	191	20	mg/kg	01.08.19 12:57	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	143	**	138	**	70-135	%	01.08.19 12:57
o-Terphenyl	140	**	137	**	70-135	%	01.08.19 12:57

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3074729 Matrix: Solid Date Prep: 01.03.19
MB Sample Id: 7669169-1-BLK LCS Sample Id: 7669169-1-BKS LCSD Sample Id: 7669169-1-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	0.0960	96	0.125	125	70-130	26	35	mg/kg	01.03.19 08:59	
Toluene	<0.00200	0.100	0.0896	90	0.105	105	70-130	16	35	mg/kg	01.03.19 08:59	
Ethylbenzene	<0.00200	0.100	0.100	100	0.128	128	70-130	25	35	mg/kg	01.03.19 08:59	
m,p-Xylenes	<0.00401	0.200	0.214	107	0.253	127	70-130	17	35	mg/kg	01.03.19 08:59	
o-Xylene	<0.00200	0.100	0.0982	98	0.122	122	70-130	22	35	mg/kg	01.03.19 08:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		84		98		70-130	%	01.03.19 08:59
4-Bromofluorobenzene	104		74		98		70-130	%	01.03.19 08:59

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3074729 Matrix: Soil Date Prep: 01.03.19
Parent Sample Id: 609809-017 MS Sample Id: 609809-017 S MSD Sample Id: 609809-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.102	102	0.107	108	70-130	5	35	mg/kg	01.03.19 09:41	
Toluene	<0.00200	0.100	0.0846	85	0.0818	82	70-130	3	35	mg/kg	01.03.19 09:41	
Ethylbenzene	<0.00200	0.100	0.0897	90	0.0779	78	70-130	14	35	mg/kg	01.03.19 09:41	
m,p-Xylenes	<0.00401	0.200	0.204	102	0.190	95	70-130	7	35	mg/kg	01.03.19 09:41	
o-Xylene	<0.00200	0.100	0.109	109	0.100	101	70-130	9	35	mg/kg	01.03.19 09:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		94		70-130	%	01.03.19 09:41
4-Bromofluorobenzene	108		89		70-130	%	01.03.19 09:41

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

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

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

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

Final 1.000

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 609962

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178 Email:	abaker@ltenv.com	

Work Order Comments

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

Project Name:	Shocker 32 State #3H	Turn Around	
Project Number:	BP# Not Assigned	Routine	☑
P.O. Number:		Rush:	
Sampler's Name:	Benjamin Belill	Due Date:	

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
SS01	S	12/27/18	0930	0.5'	1	X	X	X	Discrete
SS02	S	12/27/18	0935	0.5'	1	X	X	X	Discrete
				BGP		12/27/18			

ANALYSIS REQUEST

Work Order Notes

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Benjamin Belill	Chase Pitcher	12/27/18 11:35	2 Chase Pitcher	12/27/18 1735	12/27/18 15:30
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Final 1.000

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: 12/28/2018 12:35:00 PM

Work Order #: 609962

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 12/28/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 12/28/2018
Jessica Kramer

Analytical Report 617157

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Shocker 32 State Com #3

13-MAR-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

13-MAR-19

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

Reference: XENCO Report No(s): **617157**
Shocker 32 State Com #3
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 617157. 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. 617157 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 617157

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	03-07-19 12:10	0.5 ft	617157-001
PH01A	S	03-07-19 12:15	1.0 ft	617157-002
PH02	S	03-07-19 12:25	0.5 ft	617157-003
PH02A	S	03-07-19 12:30	1.0 ft	617157-004
PH03	S	03-07-19 12:40	0.5 ft	617157-005
PH03A	S	03-07-19 12:45	1.5 ft	617157-006
PH04	S	03-07-19 12:50	0.5 ft	617157-007
PH04A	S	03-07-19 13:00	1.0 ft	617157-008
FS01	S	03-07-19 14:15	1.0 ft	617157-009

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3081804 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Benzene Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 617157-001, -002, -003, -004, -005, -006, -007, -008, -009

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 617157-002,617157-009,617157-006.

Lab Sample ID 617157-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike. Ethylbenzene 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: 617157-001, -002, -003, -004, -005, -006, -007, -008, -009.
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 617157

LT Environmental, Inc., Arvada, CO

Project Name: Shocker 32 State Com #3

Project Id:

Contact: Adrian Baker

Project Location: Delaware Basin

Date Received in Lab: Mon Mar-11-19 07:40 am

Report Date: 13-MAR-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	617157-001		617157-002		617157-003		617157-004		617157-005		617157-006	
	Field Id:	PH01		PH01A		PH02		PH02A		PH03		PH03A	
	Depth:	0.5- ft		1.0- ft		0.5- ft		1.0- ft		0.5- ft		1.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-07-19 12:10		Mar-07-19 12:15		Mar-07-19 12:25		Mar-07-19 12:30		Mar-07-19 12:40		Mar-07-19 12:45	
BTEX by EPA 8021B	***Extracted:***	Mar-11-19 11:00		Mar-11-19 11:00		Mar-11-19 11:00		Mar-11-19 11:00		Mar-11-19 11:00		Mar-11-19 11:00	
	Analyzed:	Mar-12-19 04:36		Mar-12-19 04:55		Mar-12-19 05:14		Mar-12-19 05:33		Mar-12-19 05:52		Mar-12-19 06:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Toluene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
m,p-Xylenes		<0.00402	0.00402	<0.00401	0.00401	<0.00403	0.00403	<0.00400	0.00400	<0.00402	0.00402	<0.00398	0.00398
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Total BTEX		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Inorganic Anions by EPA 300	***Extracted:***	Mar-11-19 12:30		Mar-11-19 12:30		Mar-11-19 12:30		Mar-11-19 12:30		Mar-11-19 12:30		Mar-11-19 12:30	
	Analyzed:	Mar-11-19 23:15		Mar-12-19 10:30		Mar-11-19 23:47		Mar-11-19 23:58		Mar-12-19 00:09		Mar-12-19 00:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		55.8	5.02	47.1	5.00	49.2	4.95	38.0	4.95	18.9	4.95	32.5	4.95
TPH by SW8015 Mod	***Extracted:***	Mar-11-19 15:00		Mar-11-19 15:00		Mar-11-19 15:00		Mar-11-19 15:00		Mar-11-19 15:00		Mar-11-19 15:00	
	Analyzed:	Mar-11-19 20:59		Mar-11-19 21:59		Mar-11-19 22:19		Mar-11-19 22:39		Mar-11-19 22:59		Mar-11-19 23:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		85.7	15.0	52.8	15.0	28.2	15.0	<14.9	14.9	23.2	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		15.1	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0
Total TPH		101	15.0	52.8	15.0	28.2	15.0	<14.9	14.9	23.2	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 617157

LT Environmental, Inc., Arvada, CO

Project Name: Shocker 32 State Com #3

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

Date Received in Lab: Mon Mar-11-19 07:40 am
Report Date: 13-MAR-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	617157-007		617157-008		617157-009				
	Field Id:	PH04		PH04A		FS01				
	Depth:	0.5- ft		1.0- ft		1.0- ft				
	Matrix:	SOIL		SOIL		SOIL				
	Sampled:	Mar-07-19 12:50		Mar-07-19 13:00		Mar-07-19 14:15				
BTEX by EPA 8021B	***Extracted:***	Mar-11-19 11:00		Mar-11-19 11:00		Mar-11-19 11:00				
	Analyzed:	Mar-12-19 06:30		Mar-12-19 06:49		Mar-12-19 07:08				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200			
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200			
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200			
m,p-Xylenes		<0.00401	0.00401	<0.00401	0.00401	0.0112	0.00399			
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	0.00501	0.00200			
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	0.0162	0.00200			
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	0.0162	0.00200			
Inorganic Anions by EPA 300	***Extracted:***	Mar-11-19 12:30		Mar-11-19 12:30		Mar-11-19 12:30				
	Analyzed:	Mar-12-19 12:59		Mar-12-19 09:48		Mar-12-19 14:29				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		15.5	4.96	54.9	4.98	11.4	4.99			
TPH by SW8015 Mod	***Extracted:***	Mar-11-19 15:00		Mar-11-19 15:00		Mar-11-19 15:00				
	Analyzed:	Mar-11-19 23:39		Mar-11-19 23:58		Mar-12-19 00:19				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	42.9	15.0			
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	1130	15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	141	15.0			
Total TPH		<15.0	15.0	<15.0	15.0	1310	15.0			

Jessica Kramer
Project Assistant

Certificate of Analytical Results 617157

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-001	Date Collected:	03.07.19 12.10	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.11.19 12.30	Basis:	Wet Weight
Seq Number:	3081892				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**55.8**	5.02	mg/kg	03.11.19 23.15		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.11.19 15.00	Basis:	Wet Weight
Seq Number:	3081806				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.11.19 20.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	**85.7**	15.0	mg/kg	03.11.19 20.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**15.1**	15.0	mg/kg	03.11.19 20.59		1
Total TPH	PHC635	**101**	15.0	mg/kg	03.11.19 20.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	03.11.19 20.59	
o-Terphenyl	84-15-1	91	%	70-135	03.11.19 20.59	

Certificate of Analytical Results 617157

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-001	Date Collected:	03.07.19 12.10	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.11.19 11.00	Basis:	Wet Weight
Seq Number:	3081804				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.12.19 04.36	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.12.19 04.36	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.12.19 04.36	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.12.19 04.36	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.12.19 04.36	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.12.19 04.36	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.12.19 04.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	126	%	70-130	03.12.19 04.36	
1,4-Difluorobenzene	540-36-3	103	%	70-130	03.12.19 04.36	

Certificate of Analytical Results 617157

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-002	Date Collected:	03.07.19 12.15	Sample Depth:	1.0 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.11.19 12.30	Basis:	Wet Weight
Seq Number:	3081892				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**47.1**	5.00	mg/kg	03.12.19 10.30		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.11.19 15.00	Basis:	Wet Weight
Seq Number:	3081806				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.11.19 21.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	**52.8**	15.0	mg/kg	03.11.19 21.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.11.19 21.59	U	1
Total TPH	PHC635	**52.8**	15.0	mg/kg	03.11.19 21.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	03.11.19 21.59	
o-Terphenyl	84-15-1	93	%	70-135	03.11.19 21.59	

Certificate of Analytical Results 617157

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-002	Date Collected:	03.07.19 12.15	Sample Depth:	1.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.11.19 11.00	Basis:	Wet Weight
Seq Number:	3081804				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.12.19 04.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.12.19 04.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.12.19 04.55	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.12.19 04.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.12.19 04.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.12.19 04.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.12.19 04.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	148	%	70-130	03.12.19 04.55	**
1,4-Difluorobenzene	540-36-3	101	%	70-130	03.12.19 04.55	

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LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-003	Date Collected:	03.07.19 12.25	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.11.19 12.30	Basis:	Wet Weight
Seq Number:	3081892				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**49.2**	4.95	mg/kg	03.11.19 23.47		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.11.19 15.00	Basis:	Wet Weight
Seq Number:	3081806				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.11.19 22.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	**28.2**	15.0	mg/kg	03.11.19 22.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.11.19 22.19	U	1
Total TPH	PHC635	**28.2**	15.0	mg/kg	03.11.19 22.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	03.11.19 22.19	
o-Terphenyl	84-15-1	92	%	70-135	03.11.19 22.19	

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LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-003	Date Collected:	03.07.19 12.25	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.11.19 11.00	Basis:	Wet Weight
Seq Number:	3081804				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.12.19 05.14	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.12.19 05.14	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.12.19 05.14	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.12.19 05.14	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.12.19 05.14	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.12.19 05.14	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.12.19 05.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	03.12.19 05.14	
4-Bromofluorobenzene	460-00-4	127	%	70-130	03.12.19 05.14	

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LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-004	Date Collected:	03.07.19 12.30	Sample Depth:	1.0 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.11.19 12.30	Basis:	Wet Weight
Seq Number:	3081892				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**38.0**	4.95	mg/kg	03.11.19 23.58		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.11.19 15.00	Basis:	Wet Weight
Seq Number:	3081806				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	03.11.19 22.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.11.19 22.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	03.11.19 22.39	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	03.11.19 22.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	03.11.19 22.39	
o-Terphenyl	84-15-1	90	%	70-135	03.11.19 22.39	

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LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-004	Date Collected:	03.07.19 12.30	Sample Depth:	1.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.11.19 11.00	Basis:	Wet Weight
Seq Number:	3081804				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.12.19 05.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.12.19 05.33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.12.19 05.33	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.12.19 05.33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.12.19 05.33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.12.19 05.33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.12.19 05.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	129	%	70-130	03.12.19 05.33	
1,4-Difluorobenzene	540-36-3	103	%	70-130	03.12.19 05.33	

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LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-005	Date Collected:	03.07.19 12.40	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.11.19 12.30	Basis:	Wet Weight
Seq Number:	3081892				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.9**	4.95	mg/kg	03.12.19 00.09		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.11.19 15.00	Basis:	Wet Weight
Seq Number:	3081806				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.11.19 22.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	**23.2**	15.0	mg/kg	03.11.19 22.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.11.19 22.59	U	1
Total TPH	PHC635	**23.2**	15.0	mg/kg	03.11.19 22.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	03.11.19 22.59	
o-Terphenyl	84-15-1	90	%	70-135	03.11.19 22.59	

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LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-005	Date Collected:	03.07.19 12.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.11.19 11.00	Basis:	Wet Weight
Seq Number:	3081804				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.12.19 05.52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.12.19 05.52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.12.19 05.52	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.12.19 05.52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.12.19 05.52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.12.19 05.52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.12.19 05.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	125	%	70-130	03.12.19 05.52	
1,4-Difluorobenzene	540-36-3	104	%	70-130	03.12.19 05.52	

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Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-006	Date Collected:	03.07.19 12.45	Sample Depth:	1.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.11.19 12.30	Basis:	Wet Weight
Seq Number:	3081892				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**32.5**	4.95	mg/kg	03.12.19 00.19		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.11.19 15.00	Basis:	Wet Weight
Seq Number:	3081806				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.11.19 23.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.11.19 23.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.11.19 23.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.11.19 23.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	03.11.19 23.19	
o-Terphenyl	84-15-1	101	%	70-135	03.11.19 23.19	

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LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-006	Date Collected:	03.07.19 12.45	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.11.19 11.00	Basis:	Wet Weight
Seq Number:	3081804				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.12.19 06.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.12.19 06.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.12.19 06.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.12.19 06.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.12.19 06.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.12.19 06.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.12.19 06.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	03.12.19 06.11	
4-Bromofluorobenzene	460-00-4	132	%	70-130	03.12.19 06.11	**

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Sample Id:	**PH04**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-007	Date Collected:	03.07.19 12.50	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.11.19 12.30	Basis:	Wet Weight
Seq Number:	3081892				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.5**	4.96	mg/kg	03.12.19 12.59		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.11.19 15.00	Basis:	Wet Weight
Seq Number:	3081806				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.11.19 23.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.11.19 23.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.11.19 23.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.11.19 23.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	03.11.19 23.39	
o-Terphenyl	84-15-1	89	%	70-135	03.11.19 23.39	

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Sample Id:	**PH04**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-007	Date Collected:	03.07.19 12.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.11.19 11.00	Basis:	Wet Weight
Seq Number:	3081804				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.12.19 06.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.12.19 06.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.12.19 06.30	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.12.19 06.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.12.19 06.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.12.19 06.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.12.19 06.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	128	%	70-130	03.12.19 06.30	
1,4-Difluorobenzene	540-36-3	102	%	70-130	03.12.19 06.30	

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Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-008	Date Collected:	03.07.19 13.00	Sample Depth:	1.0 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.11.19 12.30	Basis:	Wet Weight
Seq Number:	3081892				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**54.9**	4.98	mg/kg	03.12.19 09.48		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.11.19 15.00	Basis:	Wet Weight
Seq Number:	3081806				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.11.19 23.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.11.19 23.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.11.19 23.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.11.19 23.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	03.11.19 23.58	
o-Terphenyl	84-15-1	92	%	70-135	03.11.19 23.58	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-008	Date Collected:	03.07.19 13.00	Sample Depth:	1.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.11.19 11.00	Basis:	Wet Weight
Seq Number:	3081804				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.12.19 06.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.12.19 06.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.12.19 06.49	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.12.19 06.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.12.19 06.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.12.19 06.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.12.19 06.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	03.12.19 06.49	
4-Bromofluorobenzene	460-00-4	116	%	70-130	03.12.19 06.49	

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LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-009	Date Collected:	03.07.19 14.15	Sample Depth:	1.0 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.11.19 12.30	Basis:	Wet Weight
Seq Number:	3081892				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.4**	4.99	mg/kg	03.12.19 14.29		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.11.19 15.00	Basis:	Wet Weight
Seq Number:	3081806				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**42.9**	15.0	mg/kg	03.12.19 00.19		1
Diesel Range Organics (DRO)	C10C28DRO	**1130**	15.0	mg/kg	03.12.19 00.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**141**	15.0	mg/kg	03.12.19 00.19		1
Total TPH	PHC635	**1310**	15.0	mg/kg	03.12.19 00.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.12.19 00.19	
o-Terphenyl	84-15-1	110	%	70-135	03.12.19 00.19	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**FS01**	Matrix:	Soil	Date Received:	03.11.19 07.40
Lab Sample Id:	617157-009	Date Collected:	03.07.19 14.15	Sample Depth:	1.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.11.19 11.00	Basis:	Wet Weight
Seq Number:	3081804				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.12.19 07.08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.12.19 07.08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.12.19 07.08	U	1
m,p-Xylenes	179601-23-1	**0.0112**	0.00399	mg/kg	03.12.19 07.08		1
o-Xylene	95-47-6	**0.00501**	0.00200	mg/kg	03.12.19 07.08		1
Total Xylenes	1330-20-7	**0.0162**	0.00200	mg/kg	03.12.19 07.08		1
Total BTEX		**0.0162**	0.00200	mg/kg	03.12.19 07.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	136	%	70-130	03.12.19 07.08	**
1,4-Difluorobenzene	540-36-3	97	%	70-130	03.12.19 07.08	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 617157

LT Environmental, Inc.

Shocker 32 State Com #3

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3081892 Matrix: Solid Date Prep: 03.11.19
MB Sample Id: 7673339-1-BLK LCS Sample Id: 7673339-1-BKS LCSD Sample Id: 7673339-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	267	107	268	107	90-110	0	20	mg/kg	03.11.19 22:54	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3081892 Matrix: Soil Date Prep: 03.11.19
Parent Sample Id: 617157-001 MS Sample Id: 617157-001 S MSD Sample Id: 617157-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	55.8	251	331	110	329	109	90-110	1	20	mg/kg	03.11.19 23:26	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3081892 Matrix: Soil Date Prep: 03.11.19
Parent Sample Id: 617157-002 MS Sample Id: 617157-002 S MSD Sample Id: 617157-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	47.1	250	303	102	303	102	90-110	0	20	mg/kg	03.12.19 10:41	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3081806 Matrix: Solid Date Prep: 03.11.19
MB Sample Id: 7673378-1-BLK LCS Sample Id: 7673378-1-BKS LCSD Sample Id: 7673378-1-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	997	100	993	99	70-135	0	20	mg/kg	03.11.19 20:20	
Diesel Range Organics (DRO)	<8.13	1000	1000	100	1010	101	70-135	1	20	mg/kg	03.11.19 20:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		127		126		70-135	%	03.11.19 20:20
o-Terphenyl	100		110		107		70-135	%	03.11.19 20:20

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 617157

LT Environmental, Inc.

Shocker 32 State Com #3

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3081806 Matrix: Soil Date Prep: 03.11.19
Parent Sample Id: 617157-001 MS Sample Id: 617157-001 S MSD Sample Id: 617157-001 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	967	97	1050	105	70-135	8	20	mg/kg	03.11.19 21:19	
Diesel Range Organics (DRO)	85.7	999	1030	95	1130	105	70-135	9	20	mg/kg	03.11.19 21:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		129		70-135	%	03.11.19 21:19
o-Terphenyl	97		110		70-135	%	03.11.19 21:19

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3081804 Matrix: Solid Date Prep: 03.11.19
MB Sample Id: 7673385-1-BLK LCS Sample Id: 7673385-1-BKS LCSD Sample Id: 7673385-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.104	105	0.104	104	70-130	0	35	mg/kg	03.12.19 02:43	
Toluene	<0.000453	0.0994	0.0920	93	0.0934	93	70-130	2	35	mg/kg	03.12.19 02:43	
Ethylbenzene	<0.000561	0.0994	0.0883	89	0.0896	90	70-130	1	35	mg/kg	03.12.19 02:43	
m,p-Xylenes	<0.00101	0.199	0.177	89	0.180	90	70-130	2	35	mg/kg	03.12.19 02:43	
o-Xylene	<0.000342	0.0994	0.0875	88	0.0893	89	70-130	2	35	mg/kg	03.12.19 02:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		104		105		70-130	%	03.12.19 02:43
4-Bromofluorobenzene	95		95		96		70-130	%	03.12.19 02:43

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3081804 Matrix: Soil Date Prep: 03.11.19
Parent Sample Id: 617157-001 MS Sample Id: 617157-001 S MSD Sample Id: 617157-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0557	56	0.0803	81	70-130	36	35	mg/kg	03.12.19 03:21	XF
Toluene	0.000775	0.0998	0.0647	64	0.0750	75	70-130	15	35	mg/kg	03.12.19 03:21	X
Ethylbenzene	0.000724	0.0998	0.0616	61	0.0692	69	70-130	12	35	mg/kg	03.12.19 03:21	X
m,p-Xylenes	0.00154	0.200	0.134	66	0.143	71	70-130	6	35	mg/kg	03.12.19 03:21	X
o-Xylene	0.000825	0.0998	0.0690	68	0.0720	71	70-130	4	35	mg/kg	03.12.19 03:21	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		104		70-130	%	03.12.19 03:21
4-Bromofluorobenzene	119		103		70-130	%	03.12.19 03:21

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

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

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

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

Chain of Custody

Work Order No: 617157

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178	Email: ~~bbelill@ltenv.com~~ abyers@ltenv.com abaker@ltenv.com	

Work Order Comments

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

Project Name:	Shocker 32 State Com #3	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP 5136	Rush: same day	
Sampler's Name:	~~Benjamin Belill~~ Anna Byers	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	4.1/4.0	Thermometer ID	R8
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
PH01	S	3/7/19	1210	0.5'	1			
PH01 A			1215	1.0'	1			
PH02			1225	0.5'	1			
PH02 A			1230	1.0'	1			
PH03			1240	0.5'	1			
PH03A			1245	1.5'	1			
PH04			1250	0.5'	1			
PH04 A			1300	1.0'	1			
FS01			1415	1.0'	1			

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Anna Byers		3/8/19@1500	2		3/11/19 0740
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 28 of 30

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

CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 08MAR19
ACTWGT: 39.00 LB
CAD: 101813706/INET4100
DIMS: 22x15x16 IN

BILL RECIPIENT

TO **HOLD FOR XENCO**
FEDEX OFFICE PRINT & SHIP CENTER
FEDEX OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

MIDLAND TX 79701
(806) 674-0639

REF: XENCO
INV:
PO:
DEPT:

565J1/46D3/23AD

J191019010701uv

FedEx Express

SATURDAY HOLD

PRIORITY OVERNIGHT

TRK# 0201 **7746 6118 1602**

HLD

MAFKI

41 MAFA

TX-US **LBB**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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: 03/11/2019 07:40:00 AM

Work Order #: 617157

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

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 03/11/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 03/11/2019
Jessica Kramer

Analytical Report 617807

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Shocker 32 State Com #3

18-MAR-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

18-MAR-19

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

Reference: XENCO Report No(s): **617807**
Shocker 32 State Com #3
Project Address: ---

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) 617807. 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. 617807 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,

Kalei Stout
Midland Laboratory Director

Sample Cross Reference 617807

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH05	S	03-13-19 16:00	0.5 ft	617807-001
PH05A	S	03-13-19 16:10	1.0 ft	617807-002
PH06	S	03-13-19 16:25	0.5 ft	617807-003
PH06A	S	03-13-19 16:35	1.0 ft	617807-004

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3082421 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 617807-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Ethylbenzene, m,p-Xylenes recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 617807-001, -002, -003, -004.
The Laboratory Control Sample for Benzene, m,p-Xylenes, Ethylbenzene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 617807

LT Environmental, Inc., Arvada, CO

Project Name: Shocker 32 State Com #3

Project Id: ---
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Fri Mar-15-19 11:46 am
Report Date: 18-MAR-19
Project Manager: Kalei Stout

Analysis Requested													
	Lab Id:	617807-001		617807-002		617807-003		617807-004					
	Field Id:	PH05		PH05A		PH06		PH06A					
	Depth:	0.5- ft		1.0- ft		0.5- ft		1.0- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Mar-13-19 16:00		Mar-13-19 16:10		Mar-13-19 16:25		Mar-13-19 16:35					
BTEX by EPA 8021B	***Extracted:***	Mar-15-19 12:00		Mar-15-19 12:00		Mar-15-19 12:00		Mar-15-19 12:00					
	Analyzed:	Mar-16-19 05:32		Mar-16-19 05:51		Mar-16-19 06:10		Mar-16-19 06:29					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
m,p-Xylenes		<0.00398	0.00398	<0.00399	0.00399	<0.00402	0.00402	<0.00398	0.00398				
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
Inorganic Anions by EPA 300	***Extracted:***	Mar-15-19 13:30		Mar-15-19 13:30		Mar-15-19 13:30		Mar-15-19 13:30					
	Analyzed:	Mar-15-19 14:02		Mar-15-19 14:20		Mar-15-19 14:26		Mar-15-19 14:32					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		28.3	5.00	17.4	4.97	38.2	4.95	33.3	4.95				
TPH by SW8015 Mod	***Extracted:***	Mar-15-19 17:00		Mar-15-19 17:00		Mar-15-19 17:00		Mar-15-19 17:00					
	Analyzed:	Mar-16-19 02:54		Mar-16-19 03:13		Mar-16-19 03:33		Mar-16-19 03:53					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		34.0	15.0	27.7	15.0	31.3	15.0	25.7	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total TPH		34.0	15.0	27.7	15.0	31.3	15.0	25.7	15.0				

Certificate of Analytical Results 617807

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	03.15.19 11.46
Lab Sample Id:	617807-001	Date Collected:	03.13.19 16.00	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.15.19 13.30	Basis:	Wet Weight
Seq Number:	3082345				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.3**	5.00	mg/kg	03.15.19 14.02		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.15.19 17.00	Basis:	Wet Weight
Seq Number:	3082336				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.16.19 02.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	**34.0**	15.0	mg/kg	03.16.19 02.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.16.19 02.54	U	1
Total TPH	PHC635	**34.0**	15.0	mg/kg	03.16.19 02.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.16.19 02.54	
o-Terphenyl	84-15-1	95	%	70-135	03.16.19 02.54	

Certificate of Analytical Results 617807

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	03.15.19 11.46
Lab Sample Id:	617807-001	Date Collected:	03.13.19 16.00	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.15.19 12.00	Basis:	Wet Weight
Seq Number:	3082421				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.16.19 05.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.16.19 05.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.16.19 05.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.16.19 05.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.16.19 05.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.16.19 05.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.16.19 05.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	03.16.19 05.32	
4-Bromofluorobenzene	460-00-4	114	%	70-130	03.16.19 05.32	

Certificate of Analytical Results 617807

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	03.15.19 11.46
Lab Sample Id:	617807-002	Date Collected:	03.13.19 16.10	Sample Depth:	1.0 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.15.19 13.30	Basis:	Wet Weight
Seq Number:	3082345				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**17.4**	4.97	mg/kg	03.15.19 14.20		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.15.19 17.00	Basis:	Wet Weight
Seq Number:	3082336				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.16.19 03.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	**27.7**	15.0	mg/kg	03.16.19 03.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.16.19 03.13	U	1
Total TPH	PHC635	**27.7**	15.0	mg/kg	03.16.19 03.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	03.16.19 03.13	
o-Terphenyl	84-15-1	93	%	70-135	03.16.19 03.13	

Certificate of Analytical Results 617807

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	03.15.19 11.46
Lab Sample Id:	617807-002	Date Collected:	03.13.19 16.10	Sample Depth:	1.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.15.19 12.00	Basis:	Wet Weight
Seq Number:	3082421				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.16.19 05.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.16.19 05.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.16.19 05.51	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.16.19 05.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.16.19 05.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.16.19 05.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.16.19 05.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	03.16.19 05.51	
4-Bromofluorobenzene	460-00-4	120	%	70-130	03.16.19 05.51	

Certificate of Analytical Results 617807

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	03.15.19 11.46
Lab Sample Id:	617807-003	Date Collected:	03.13.19 16.25	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.15.19 13.30	Basis:	Wet Weight
Seq Number:	3082345				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**38.2**	4.95	mg/kg	03.15.19 14.26		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.15.19 17.00	Basis:	Wet Weight
Seq Number:	3082336				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.16.19 03.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	**31.3**	15.0	mg/kg	03.16.19 03.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.16.19 03.33	U	1
Total TPH	PHC635	**31.3**	15.0	mg/kg	03.16.19 03.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	03.16.19 03.33	
o-Terphenyl	84-15-1	89	%	70-135	03.16.19 03.33	

Certificate of Analytical Results 617807

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	03.15.19 11.46
Lab Sample Id:	617807-003	Date Collected:	03.13.19 16.25	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.15.19 12.00	Basis:	Wet Weight
Seq Number:	3082421				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.16.19 06.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.16.19 06.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.16.19 06.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.16.19 06.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.16.19 06.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.16.19 06.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.16.19 06.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	03.16.19 06.10	
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.16.19 06.10	

Certificate of Analytical Results 617807

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH06A**	Matrix:	Soil	Date Received:	03.15.19 11.46
Lab Sample Id:	617807-004	Date Collected:	03.13.19 16.35	Sample Depth:	1.0 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.15.19 13.30	Basis:	Wet Weight
Seq Number:	3082345				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**33.3**	4.95	mg/kg	03.15.19 14.32		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.15.19 17.00	Basis:	Wet Weight
Seq Number:	3082336				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.16.19 03.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	**25.7**	15.0	mg/kg	03.16.19 03.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.16.19 03.53	U	1
Total TPH	PHC635	**25.7**	15.0	mg/kg	03.16.19 03.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	03.16.19 03.53	
o-Terphenyl	84-15-1	91	%	70-135	03.16.19 03.53	

Certificate of Analytical Results 617807

LT Environmental, Inc., Arvada, CO

Shocker 32 State Com #3

Sample Id:	**PH06A**	Matrix:	Soil	Date Received:	03.15.19 11.46
Lab Sample Id:	617807-004	Date Collected:	03.13.19 16.35	Sample Depth:	1.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.15.19 12.00	Basis:	Wet Weight
Seq Number:	3082421				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.16.19 06.29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.16.19 06.29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.16.19 06.29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.16.19 06.29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.16.19 06.29	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.16.19 06.29	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.16.19 06.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	03.16.19 06.29	
1,4-Difluorobenzene	540-36-3	106	%	70-130	03.16.19 06.29	

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 617807

LT Environmental, Inc.

Shocker 32 State Com #3

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3082345 Matrix: Solid Date Prep: 03.15.19
MB Sample Id: 7673649-1-BLK LCS Sample Id: 7673649-1-BKS LCSD Sample Id: 7673649-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	242	97	240	96	90-110	1	20	mg/kg	03.15.19 13:50	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3082345 Matrix: Soil Date Prep: 03.15.19
Parent Sample Id: 617807-001 MS Sample Id: 617807-001 S MSD Sample Id: 617807-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.3	250	264	94	263	94	90-110	0	20	mg/kg	03.15.19 14:08	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3082345 Matrix: Soil Date Prep: 03.15.19
Parent Sample Id: 617813-007 MS Sample Id: 617813-007 S MSD Sample Id: 617813-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.3	250	269	103	273	105	90-110	1	20	mg/kg	03.15.19 15:44	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3082336 Matrix: Solid Date Prep: 03.15.19
MB Sample Id: 7673700-1-BLK LCS Sample Id: 7673700-1-BKS LCSD Sample Id: 7673700-1-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	948	95	980	98	70-135	3	20	mg/kg	03.16.19 00:57	
Diesel Range Organics (DRO)	<8.13	1000	936	94	981	98	70-135	5	20	mg/kg	03.16.19 00:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		114		112		70-135	%	03.16.19 00:57
o-Terphenyl	110		97		96		70-135	%	03.16.19 00:57

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 617807

LT Environmental, Inc.

Shocker 32 State Com #3

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3082336 Matrix: Soil Date Prep: 03.15.19
Parent Sample Id: 617314-001 MS Sample Id: 617314-001 S MSD Sample Id: 617314-001 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	968	97	964	97	70-135	0	20	mg/kg	03.16.19 01:55	
Diesel Range Organics (DRO)	<8.12	999	972	97	949	95	70-135	2	20	mg/kg	03.16.19 01:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		110		70-135	%	03.16.19 01:55
o-Terphenyl	93		94		70-135	%	03.16.19 01:55

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3082421 Matrix: Solid Date Prep: 03.15.19
MB Sample Id: 7673753-1-BLK LCS Sample Id: 7673753-1-BKS LCSD Sample Id: 7673753-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.102	102	0.0989	98	70-130	3	35	mg/kg	03.16.19 03:40	
Toluene	<0.000456	0.100	0.107	107	0.103	102	70-130	4	35	mg/kg	03.16.19 03:40	
Ethylbenzene	<0.000565	0.100	0.0962	96	0.0924	91	70-130	4	35	mg/kg	03.16.19 03:40	
m,p-Xylenes	<0.00101	0.200	0.185	93	0.174	87	70-130	6	35	mg/kg	03.16.19 03:40	
o-Xylene	<0.000344	0.100	0.0949	95	0.0898	89	70-130	6	35	mg/kg	03.16.19 03:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		101		101		70-130	%	03.16.19 03:40
4-Bromofluorobenzene	105		100		97		70-130	%	03.16.19 03:40

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3082421 Matrix: Soil Date Prep: 03.15.19
Parent Sample Id: 617807-001 MS Sample Id: 617807-001 S MSD Sample Id: 617807-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.0604	60	0.0577	58	70-130	5	35	mg/kg	03.16.19 04:18	X
Toluene	<0.000459	0.101	0.0820	81	0.0741	74	70-130	10	35	mg/kg	03.16.19 04:18	
Ethylbenzene	<0.000569	0.101	0.0749	74	0.0663	66	70-130	12	35	mg/kg	03.16.19 04:18	X
m,p-Xylenes	<0.00102	0.202	0.155	77	0.137	69	70-130	12	35	mg/kg	03.16.19 04:18	X
o-Xylene	<0.000347	0.101	0.0825	82	0.0730	73	70-130	12	35	mg/kg	03.16.19 04:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		98		70-130	%	03.16.19 04:18
4-Bromofluorobenzene	124		121		70-130	%	03.16.19 04:18

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

Chain of Custody

Work Order No: 617807

XENCO LABORATORIES

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

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Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178 Email:	~~bbelill@ltenv.com~~ abyers@ltenv.com	

Work Order Comments

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

Project Name:	Shocker 32 State Com ~~#~~ 3	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP5136	Rush: same day	
Sampler's Name:	~~Benjamin Belill~~ Anna Byers	Due Date:	

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
PH05	S	3/13/19	1600	0.5'	1			
PH05A	S	3/13/19	1610	1.0'	1			
PH06	S	3/13/19	1625	0.5'	1			
PH06A	S	3/13/19	1635	1.0'	1			

03/13/19

Work Order Notes

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

Sample Comments

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Anna Byers		3/13/19	2		1146 3/13/19
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 17 of 19

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

SHIP DATE: 14MAR19
ACTWGT: 35.00 LB
CAD: 101813706/INET4100
DIMS: 18x12x15 IN

BILL RECIPIENT

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

REF:
INV:
PO:
DEPT:

565J1/46D3/23AD

J191018010701uv

FRI - 15 MAR HOLD
STANDARD OVERNIGHT
HLD

TRK# 0201 7747 0965 6030

41 MAFA

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.

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03/15/2019 11:46:00 AM

Work Order #: 617807

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: 03/15/2019

Brianna Teel

Checklist reviewed by: Kalei Stout Date: 03/17/2019

Kalei Stout

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

Identifier:	Date:
PH01	03/07/19
Project Name: Shocker 32 State Com #003H	**RP Number:** 2RP-5136
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: / Method: Pot hole
Lat/Long: / Field Screening:	Hole Diameter: 2 ft / Total Depth: 1'
Comments:	

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1145	dry	200	28.3	N		0	0.5'	S	Pad Caliche well graded Grey
1150	dry	200	19.7	N		1	1.0'	S	Pad Caliche well graded Grey
						2			
						3			
						4			
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

LT Environmental, Inc.
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Carlsbad, New Mexico 88220
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Identifier: PH02	Date: 03/07/19
Project Name: Shocker 32 State Com #003H	RP Number: 2RP-5136
Logged By:	Method: Pot hole
Lat/Long:	Field Screening:
Hole Diameter: 2ft	Total Depth: 1'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1210	dry	237	17.2	N		0	0.5'	S	Pad Caliche well graded Grey
1215	dry	326	20.3	N		1	1.0'	S	Pad Caliche well graded Grey
						2			
						3			
						4			
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

LT Environmental, Inc.

LT Environmental, Inc.
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Carlsbad, New Mexico 88220

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Identifier:	Date:
PH03	03/07/19
Project Name: Shocker 32 State Com #003H	**RP Number:** 2RP-5136
LITHOLOGIC / SOIL SAMPLING LOG	
Logged By:	Method: Pot hole
Lat/Long: / Field Screening:	Hole Diameter: 2ft / Total Depth: 1'

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1225	dry	282	21.6	N		0	0.5'	S	Pad Caliche well graded Grey
1230	dry	237	16.2	N		1	1.0'	S	Pad Caliche well graded Grey
						2			
						3			
						4			
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

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

Compliance · Engineering · Remediation

Identifier: PH04	Date: 03/07/19
Project Name: Shocker 32 State Com #003H	RP Number: 2RP-5136
Logged By:	Method: Pot hole
Hole Diameter: 2ft	Total Depth: 1.5'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1240	dry	326	50.4	N		0	0.5'	S	Pad Caliche well graded Grey
1245	dry	282	63.1	N		1	1.5'	S	Pad Caliche well graded Grey
						2			
						3			
						4			
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

LT Environmental, Inc.
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Carlsbad, New Mexico 88220
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Identifier: PH05	Date: 03/07/19
Project Name: Shocker 32 State Com #003H	RP Number: 2RP-5136
Logged By:	Method: Pot hole
Hole Diameter: 2ft	Total Depth: 0.5'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	487	1200	N		0	0.5'	S	Pad Caliche well graded Grey
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

1247

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
PH06	03/07/19
Project Name: Shocker 32 state Com #003H	**RP Number:** 2RP-5136
Logged By:	**Method:** Pot hole
Hole Diameter: 2ft	**Total Depth:** 1.0'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1250	dry	200	50.1	N		0	0.5'	S	Pad Caliche well graded Grey
1300	dry	237	34.6	N		1	1.0'	S	Pad Caliche well graded Grey
						2			
						3			
						4			
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

View of the release area prior to excavation facing north.

Project: 012918198	XTO Energy, Inc. Shocker 32 State Com #3H Battery	LTE Advancing Opportunity
December 27, 2018	Photographic Log	

View of excavation facing south.

Project: 012918198	XTO Energy, Inc. Shocker 32 State Com #3H Battery	LTE Advancing Opportunity
March 13, 2019	Photographic Log	