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	NRM2006934872
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.539737 Longitude -103.598044
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Severus Tank Battery	Site Type Tank Battery
Date Release Discovered 02/21/2020	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
O	30	20S	34E	Lea

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 1	Volume Recovered (bbls) 0
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:
The heater treater at the Severus TB malfunctioned which caused fluid to release out of the flare resulting in a small fire on the ground. The fire remained on the caliche pad and extinguished itself. No injuries or damage to the facility was reported. A third party contractor will be retained to complete remediation activities.

State of New Mexico
Oil Conservation Division

Incident ID	NRM2006934872
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? 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)?
Immediate notice was given by Amy Ruth to Mike Bratcher, Rob Hamlet, Victoria Venegas, Jim Griswold, EMNRD, blm_nm_cfo_spill@blm.gov, Crisha Morgan via email on Saturday, February 22, 2020.

Initial Response

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

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

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

N/A

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 3/6/2020

email: Kyle_Littrell@xtoenergy.com Telephone:

OCD Only

Received by: Ramona Marcus Date: 03/09/2020

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	NRM2006934872
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NRM2006934872
District RP	
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 05/19/20

email: Kyle_Littrell@xtoenergy.com Telephone:

OCD Only

Received by: Date:

Incident ID	NRM2006934872
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 05/19/20

email: Kyle_Littrell@xtoenergy.com Telephone:

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:

A proud member of WSP

LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

May 19, 2020

District 1
New Mexico Oil Conservation Division
1625 North French Drive
Hobbs, New Mexico 88240

RE: Closure Request
Severus Tank Battery
Incident Number NRM2006934872
Lea County, New Mexico

To Whom It May Concern:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment, excavation, and soil sampling activities at the Severus Tank Battery (Site) located in Unit O, Section 30, Township 20 South, Range 34 East, in Lea County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to address impacts to soil following a release of crude oil at the Site. Based on the results of the soil sampling events, XTO is submitting this Closure Request and requesting no further action (NFA) for Incident Number NRM2006934872.

RELEASE BACKGROUND

On February 21, 2020 the heater treater malfunctioned resulting in the release of 1 barrel (bbl) of crude oil and a small fire on the surrounding caliche pad, which extinguished itself. No fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on March 6, 2020 and was assigned Incident Number NRM2006934872.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest permitted groundwater well with depth to groundwater data is the United States Geological Survey (USGS) well number 323335103370601, located approximately 1.84 miles northwest of the Site. The groundwater well has a depth to groundwater of 174 feet bgs and a total depth of 676 feet bgs. Ground surface elevation at the water well location is 3,644 feet above mean sea level (amsl), which is approximately 440 feet higher in elevation than the Site. There are three other USGS wells and two NMOSE wells within a 2.8-mile radius that indicate regional depth to groundwater is greater

than 100 feet bgs. NMOSE well CP-01389 was most recently sampled in January 2015 and has a reported depth to groundwater of 1,005 feet bgs. All wells used to estimate depth to groundwater are included in Figure 1.

The closest continuously flowing water or significant watercourse to the Site is an intermittent stream located approximately 1,525 feet west of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst area).

CLOSURE CRITERIA

Based on the results of the site characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

Additionally, the reclamation of any affected area off of the well pad must be comprised of non-waste containing earthen material exhibiting chloride concentrations below 600 mg/kg, which was applied per NMAC 19.15.29.13.D (1) to the top 4 feet.

SITE ASSESSMENT, DELINEATION, AND EXCAVATION ACTIVITIES

On April 7, 2020, LTE personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected three preliminary soil samples (SS01 through SS03) from within the release extent at a depth of approximately 0.5 feet bgs to assess the lateral extent of impacted soil. Soil from the preliminary soil samples was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was conducted during excavation activities. Photographs are included in Attachment 1.

The preliminary soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil

samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, TPH-oil range organics (ORO) following EPA Method 8015M/D, and chloride following EPA Method 300.0.

Based on the laboratory analytical results for the preliminary soil samples and field observations, excavation activities did not appear to be warranted; however, additional assessment activities were scheduled to further confirm the presence or absence of impacts to soil. Laboratory analytical results for the preliminary soil samples are presented on Figure 2 and summarized in Table 1.

On April 14, 2020, LTE personnel returned to the Site to oversee additional soil assessment activities. Three boreholes (SS01A through SS03A) were advanced via stainless steel hand auger, in the immediate vicinity of preliminary soil sample SS01 through SS03 locations, to a depth of approximately 2 feet to 3 feet bgs, within the release extent.

Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride. Field screening results and observations for each borehole were documented on lithologic/soil sampling logs and are included as Attachment 2. The delineation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico. All boreholes were backfilled with the soil removed. The preliminary and delineation soil sample locations are depicted on Figure 2.

Based on laboratory analytical results for preliminary soil sample SS02, which is located in the pasture north of the well pad, remedial action, specifically excavation, appeared warranted at and around soil sample SS02 in order to comply with the reclamation requirement. In order to address visual impacts to soil, along with the surficial staining from the fire, LTE personnel oversaw the scraping of the pad and a portion of pasture north of the well pad and the excavation of soil in the vicinity of soil sample SS02 with a track-mounted backhoe on April 30, 2020. Soil in the vicinity of soil sample SS02 was excavated to approximately 1.5 feet bgs with an approximate area of 200 square feet. Approximately 11 cubic yards of contaminated soil were removed from the excavation area.

Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil sample FS01 was collected from the excavation at approximately 1.5 feet bgs. Due to the shallowness of the excavation, portions of the sidewalls were incorporated into the composite sample to be reflective of what was left in place. The excavation soil sample was collected, handled, and analyzed as described above and submitted to Xenco in Carlsbad, New Mexico.

The excavation extent and confirmation sample location are depicted on Figure 3. Areas in the pasture that were scraped will be reseeded with Bureau of Land Management (BLM) Seed Mix #2 preceding the next rain event. Photographic documentation was conducted during the scraping and excavation activities, the photographs are included in Attachment 1.

ANALYTICAL RESULTS

Laboratory analytical results indicated benzene, BTEX, TPH-GRO and TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in preliminary soil samples SS01/SS01A, SS02A, and SS03/SS03A collected between approximately 0.5 feet and 3 feet bgs. Preliminary soil sample SS02 contained TPH concentrations exceeding closure criteria at 127 mg/kg.

Laboratory analytical results indicated benzene, BTEX, TPH-GRO and TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and reclamation requirement in confirmation soil sample FS01 collected at approximately 1.5 feet bgs. Laboratory analytical results are presented on Figure 2 and summarized in Table 1. The complete laboratory analytical reports are included as Attachment 3.

CONCLUSIONS

XTO removed all surficial staining resulting from the fire and release. Preliminary soil samples SS01/SS01A through SS03/SS03A were collected from within the release extent from depths ranging from approximately 0.5 foot to 3 feet bgs to assess for the presence or absence of soil impacts as a result of the crude oil release on February 21, 2020. Preliminary soil sample SS02 contained TPH at a concentration exceeding the reclamation requirement and as a result, soil in the vicinity of soil sample SS02 was excavated to approximately 1.5 feet bgs. Laboratory analytical results for confirmation soil sample FS01, and preliminary soil samples SS01/SS01A, SS02A, and SS03/SS03A indicated benzene, BTEX, TPH-GRO and TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and reclamation requirement.

Based on initial response efforts, and soil sample laboratory analytical results compliant with the Closure Criteria, XTO requests NFA for Incident Number NRM2006934872.

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

Sincerely,

A proud member of WSP

LT ENVIRONMENTAL, INC.

William Mather
Staff Environmental Scientist

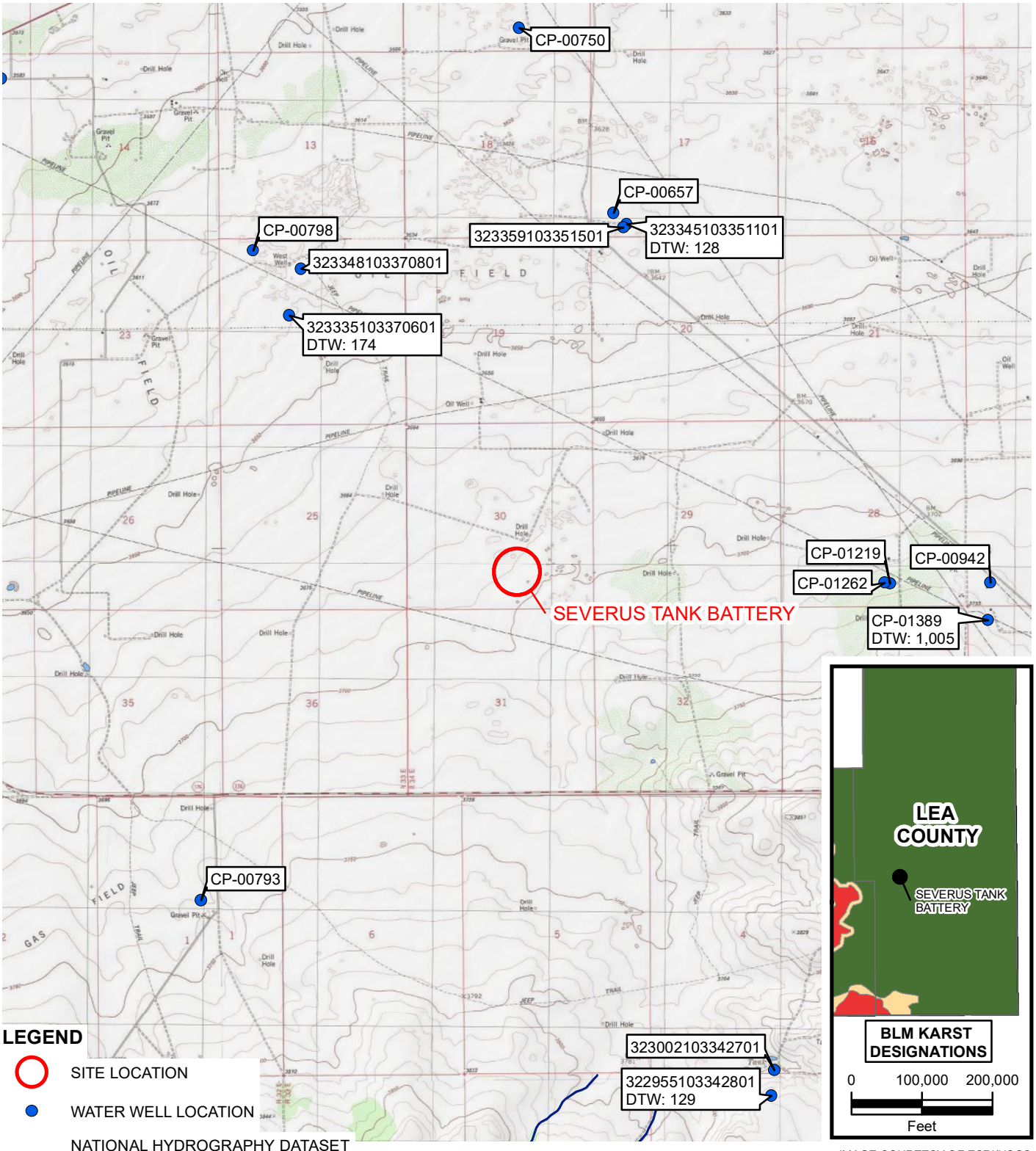
Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Attachments:

Figure 1	Site Location Map
Figure 2	Soil Sampling Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Photographic Log
Attachment 2	Lithologic / Soil Sampling Log
Attachment 3	Laboratory Analytical Reports

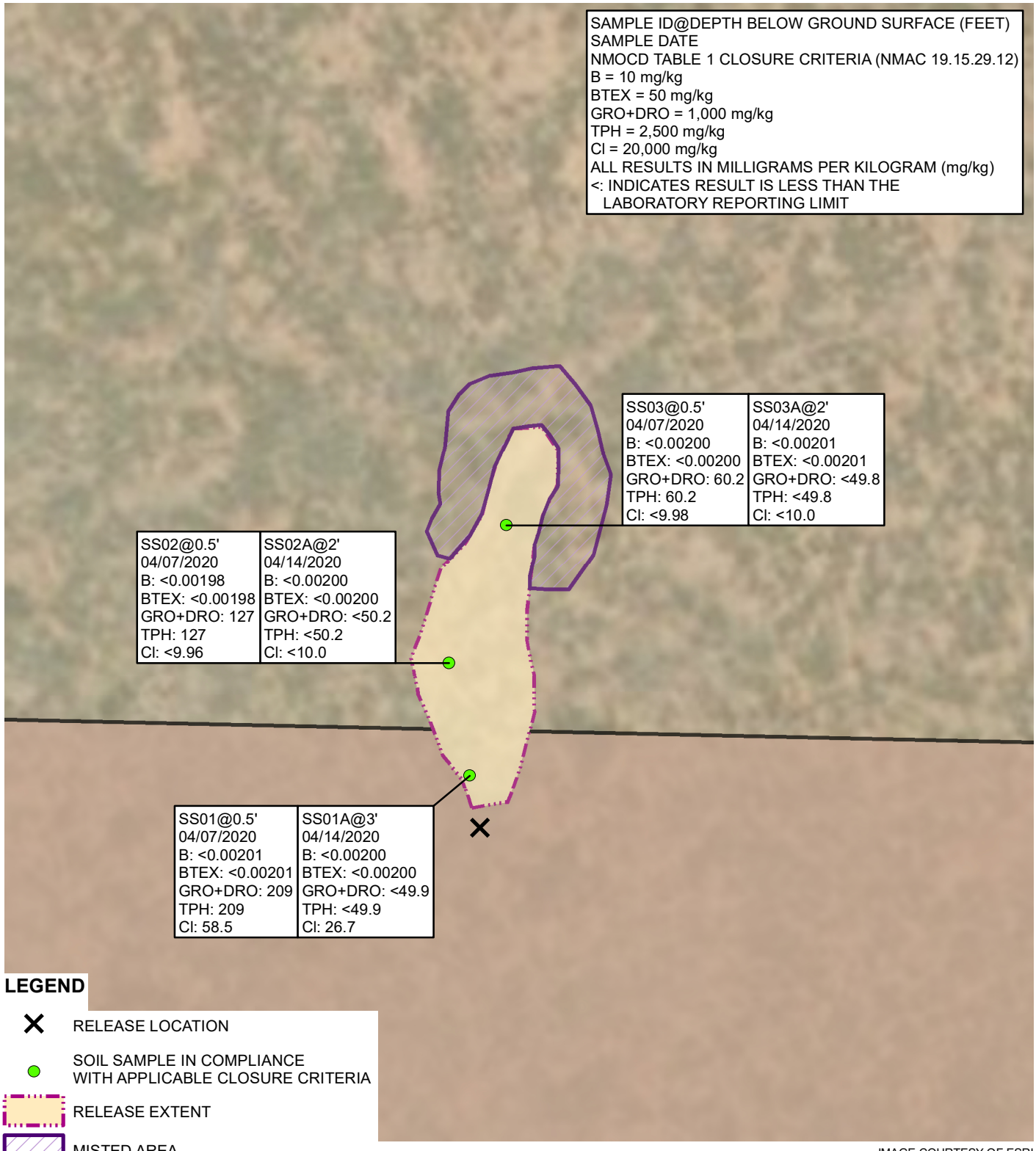
FIGURES



NOTE: REMEDIATION PERMIT NUMBER NOT ASSIGNED
DTW: DEPTH TO WATER IN FEET
BLM: BUREAU OF LAND MANAGEMENT

FIGURE 1
SITE LOCATION MAP
SEVERUS TANK BATTERY
UNIT O SEC 30 T25S R34E
LEA COUNTY, NEW MEXICO
XTO ENERGY, INC.

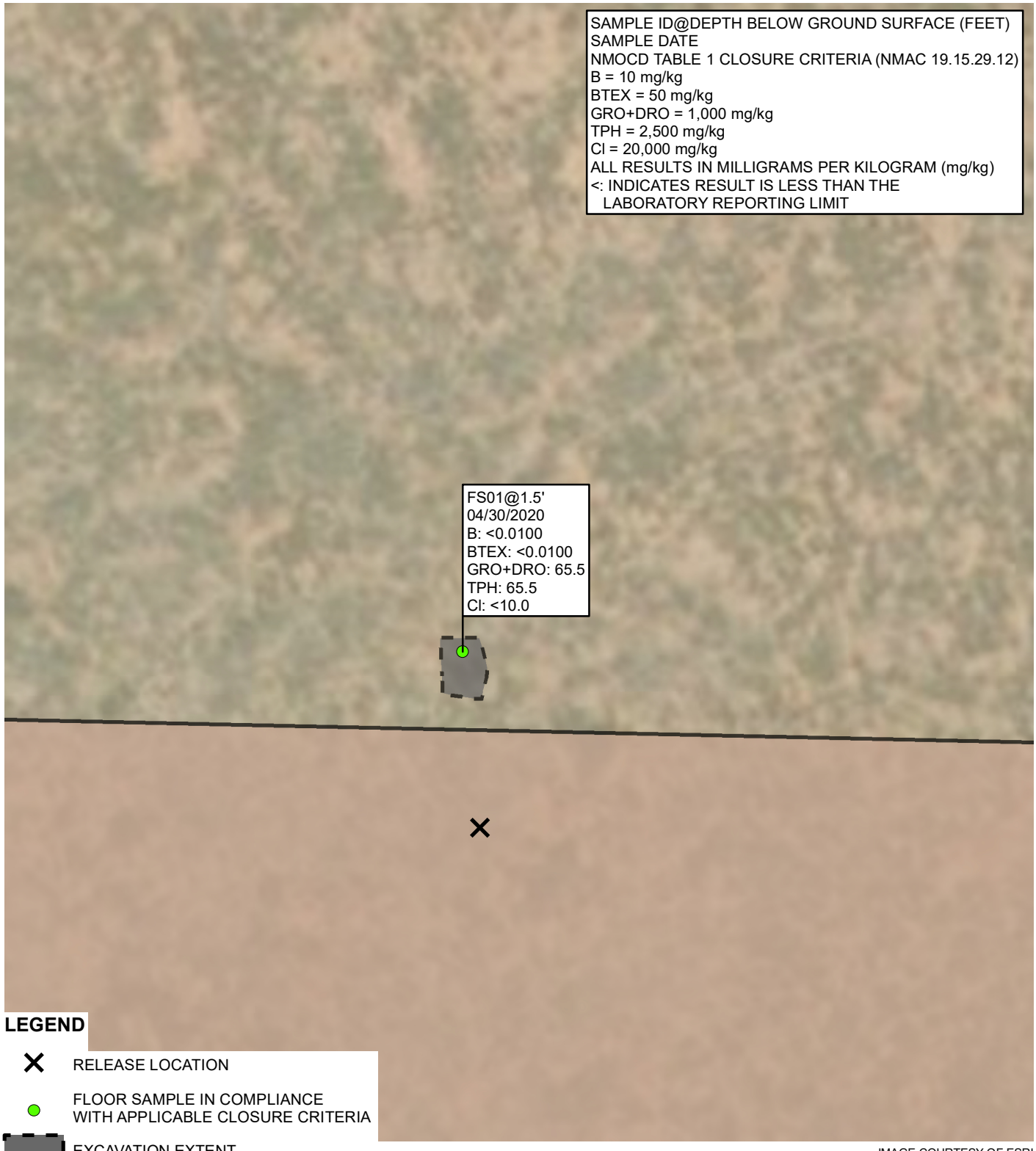
P:\XTO Energy\GIS\MXD\012920052_SEVERUS TANK BATTERY\012920052_FIG01_SL_2020.mxd



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 NOT ASSIGNED

FIGURE 2
SOIL SAMPLE LOCATIONS
SEVERUS TANK BATTERY
UNIT O SEC 30 T25S R34E
LEA COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012920052_SEVERUS TANK BATTERY\012920052_FIG02_SS_LOC_2020.mxd



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 NOT ASSIGNED

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
SEVERUS TANK BATTERY
UNIT O SEC 30 T25S R34E
LEA COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012920052_SEVERUS TANK BATTERY\012920052_FIG03_EXCAVATION_2020.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

SEVERUS CENTRAL TANK BATTERY
REMEDIATION PERMIT NUMBER NOT ASSIGNED
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
SS01	0.5	04/07/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	209	<50.1	209	209	58.5
SS01A	3	04/14/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	26.7
SS02	0.5	04/07/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	127	<49.8	127	127	<9.96
SS02A	2	04/14/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	<10.0
SS03	0.5	04/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	60.2	<50.3	60.2	60.2	<9.98
SS03A	2	04/14/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	<10.0
FS01	1.5	04/30/2020	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<50.1	65.5	<50.1	65.5	65.5	<10.0

Notes:

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
MRO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
TPH - total petroleum hydrocarbons
Bold - indicates result exceeds the applicable regulatory standard
< - indicates result is below laboratory reporting limits
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

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ATTACHMENT 1: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: View of staining from fire on pad.

Photograph 2: View of staining from fire off pad.

Photograph 3: View of scrapped area near flare stacks.

Photograph 4: View of scrapped area off pad.

Severus Central Tank Battery
32.539734, -103.598065
Photographs Taken: February 22, 2020 through April 30, 2020

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ATTACHMENT 2: LITHOLOGIC/SOIL SAMPLING LOGS

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
A proud member of WSP
Compliance · Engineering · Remediation

BH or PH Name: SS01	Date: 04/14/2020
Site Name: Severus CTB	
RP or Incident Number:	
LTE Job Number:	
Logged By: Robert M	Method: Hand Auger
Lat/Long:	Field Screening: Chloride, PID
Hole Diameter: 3"	Total Depth: 3'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
M	862	1.9	N		1'	1	S	SP-SM, Small round grain, Brown
M	1,321	1.2	N		2'	2	S	
M	200	0.1	N		3'	3	S	
						4		
						5		
						6		
						7		EOB
						8		
						9		
						10		
						11		
						12		

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
A proud member of WSP
Compliance · Engineering · Remediation

BH or PH Name: SS02	Date: 04/14/2020
Site Name: Severns CTB	
RP or Incident Number:	
LTE Job Number:	
Logged By: Robert M.	Method: Hand Auger
Hole Diameter: 3"	Total Depth: 2'
Lat/Long:	Field Screening: Chloride, PID

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
M	200	0.9	N		1'	1		SP-SM Brown Small round grain
M	200	0.8	N		2'	2		
						3		
						4		
						5		
						6		
						7		EOB
						8		
						9		
						10		
						11		
						12		

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
A proud member of WSP
Compliance · Engineering · Remediation

BH or PH Name: SS03	Date: 04/14/2020
Site Name: Severus CTB	
RP or Incident Number:	
LTE Job Number:	
Logged By: Robert M.	Method: Hand Auger
Hole Diameter: 3"	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: Chloride, PID

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
M	<124	0.1	N		1'	1	S	SP-SM Brown Small round grain
M	<124	0.1	N		2'	2	S	
						3		
						4		
						5		
						6		EOB
						7		
						8		
						9		
						10		
						11		
						12		

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS

Analytical Report 658797

for

LT Environmental, Inc.

Project Manager: Dan Moir

Severus CTB

012920052

04.15.2020

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

04.15.2020

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

Reference: XENCO Report No(s): **658797**
Severus CTB
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 658797. 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. 658797 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 Manager

A Small Business and Minority Company

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

Sample Cross Reference 658797

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01A	S	04.14.2020 11:28	3 ft	658797-001
SS02A	S	04.14.2020 10:53	2 ft	658797-002
SS03A	S	04.14.2020 10:59	2 ft	658797-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Severus CTB

Project ID: *012920052*
Work Order Number(s): *658797*

Report Date: *04.15.2020*
Date Received: *04.14.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3123048 BTEX by EPA 8021B

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

Certificate of Analysis Summary 658797

LT Environmental, Inc., Arvada, CO

Project Name: Severus CTB

Project Id: 012920052
Contact: Dan Moir
Project Location:

Date Received in Lab: Tue 04.14.2020 15:23
Report Date: 04.15.2020 13:01
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	658797-001		658797-002		658797-003					
	Field Id:	SS01A		SS02A		SS03A					
	Depth:	3- ft		2- ft		2- ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	04.14.2020 11:28		04.14.2020 10:53		04.14.2020 10:59					
BTEX by EPA 8021B	***Extracted:***	04.14.2020 16:00		04.14.2020 16:00		04.14.2020 16:00					
	Analyzed:	04.14.2020 19:55		04.14.2020 20:15		04.14.2020 20:36					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
m,p-Xylenes		<0.00401	0.00401	<0.00399	0.00399	<0.00402	0.00402				
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Chloride by EPA 300	***Extracted:***	04.14.2020 16:30		04.14.2020 16:30		04.14.2020 16:30					
	Analyzed:	04.14.2020 18:24		04.14.2020 18:30		04.14.2020 18:35					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		26.7	9.92	<10.0	10.0	<10.0	10.0				
TPH by SW8015 Mod	***Extracted:***	04.14.2020 17:10		04.14.2020 17:10		04.14.2020 17:10					
	Analyzed:	04.15.2020 11:12		04.14.2020 19:53		04.14.2020 20:13					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<50.2	50.2	<49.8	49.8				
Diesel Range Organics (DRO)		<49.9	49.9	<50.2	50.2	<49.8	49.8				
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<50.2	50.2	<49.8	49.8				
Total GRO-DRO		<49.9	49.9	<50.2	50.2	<49.8	49.8				
Total TPH		<49.9	49.9	<50.2	50.2	<49.8	49.8				

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

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

Jessica Kramer
Project Manager

Certificate of Analytical Results 658797

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS01A**	Matrix:	Soil	Date Received:	04.14.2020 15:23
Lab Sample Id:	658797-001	Date Collected:	04.14.2020 11:28	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.14.2020 16:30	Basis:	Wet Weight
Seq Number:	3123050				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.7**	9.92	mg/kg	04.14.2020 18:24		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	04.14.2020 17:10	Basis:	Wet Weight
Seq Number:	3123060				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.15.2020 11:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.15.2020 11:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.15.2020 11:12	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.15.2020 11:12	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.15.2020 11:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	04.15.2020 11:12	
o-Terphenyl	84-15-1	106	%	70-135	04.15.2020 11:12	

Certificate of Analytical Results 658797

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS01A**	Matrix:	Soil	Date Received:	04.14.2020 15:23
Lab Sample Id:	658797-001	Date Collected:	04.14.2020 11:28	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.14.2020 16:00	Basis:	Wet Weight
Seq Number:	3123048				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.14.2020 19:55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.14.2020 19:55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.14.2020 19:55	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.14.2020 19:55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.14.2020 19:55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.14.2020 19:55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.14.2020 19:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	92	%	70-130	04.14.2020 19:55	
4-Bromofluorobenzene	460-00-4	84	%	70-130	04.14.2020 19:55	

Certificate of Analytical Results 658797

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS02A**	Matrix:	Soil	Date Received:	04.14.2020 15:23
Lab Sample Id:	658797-002	Date Collected:	04.14.2020 10:53	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.14.2020 16:30	Basis:	Wet Weight
Seq Number:	3123050				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	04.14.2020 18:30	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	04.14.2020 17:10	Basis:	Wet Weight
Seq Number:	3123060				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.14.2020 19:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.14.2020 19:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.14.2020 19:53	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.14.2020 19:53	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.14.2020 19:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	04.14.2020 19:53	
o-Terphenyl	84-15-1	104	%	70-135	04.14.2020 19:53	

Certificate of Analytical Results 658797

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS02A**	Matrix:	Soil	Date Received:	04.14.2020 15:23
Lab Sample Id:	658797-002	Date Collected:	04.14.2020 10:53	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.14.2020 16:00	Basis:	Wet Weight
Seq Number:	3123048				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.14.2020 20:15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.14.2020 20:15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.14.2020 20:15	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.14.2020 20:15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.14.2020 20:15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.14.2020 20:15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.14.2020 20:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	70-130	04.14.2020 20:15	
1,4-Difluorobenzene	540-36-3	114	%	70-130	04.14.2020 20:15	

Certificate of Analytical Results 658797

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS03A**	Matrix:	Soil	Date Received:	04.14.2020 15:23
Lab Sample Id:	658797-003	Date Collected:	04.14.2020 10:59	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.14.2020 16:30	Basis:	Wet Weight
Seq Number:	3123050				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	04.14.2020 18:35	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	04.14.2020 17:10	Basis:	Wet Weight
Seq Number:	3123060				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.14.2020 20:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.14.2020 20:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.14.2020 20:13	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.14.2020 20:13	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.14.2020 20:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.14.2020 20:13	
o-Terphenyl	84-15-1	101	%	70-135	04.14.2020 20:13	

Certificate of Analytical Results 658797

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS03A**	Matrix:	Soil	Date Received:	04.14.2020 15:23
Lab Sample Id:	658797-003	Date Collected:	04.14.2020 10:59	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.14.2020 16:00	Basis:	Wet Weight
Seq Number:	3123048				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.14.2020 20:36	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.14.2020 20:36	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.14.2020 20:36	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.14.2020 20:36	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.14.2020 20:36	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.14.2020 20:36	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.14.2020 20:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	114	%	70-130	04.14.2020 20:36	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.14.2020 20:36	

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. **ND** Not Detected.

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 658797

LT Environmental, Inc.

Severus CTB

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3123050 — Matrix: Solid — Date Prep: 04.14.2020
MB Sample Id: 7701289-1-BLK — LCS Sample Id: 7701289-1-BKS — LCSD Sample Id: 7701289-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	256	102	256	102	90-110	0	20	mg/kg	04.14.2020 17:57	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3123050 — Matrix: Soil — Date Prep: 04.14.2020
Parent Sample Id: 658796-001 — MS Sample Id: 658796-001 S — MSD Sample Id: 658796-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	18.0	200	222	102	224	103	90-110	1	20	mg/kg	04.14.2020 18:13	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3123050 — Matrix: Soil — Date Prep: 04.14.2020
Parent Sample Id: 658815-007 — MS Sample Id: 658815-007 S — MSD Sample Id: 658815-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	269	198	479	106	480	107	90-110	0	20	mg/kg	04.14.2020 19:30	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3123060 — Matrix: Solid — Date Prep: 04.14.2020
MB Sample Id: 7701297-1-BLK — LCS Sample Id: 7701297-1-BKS — LCSD Sample Id: 7701297-1-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)	<50.0	1000	1050	105	1010	101	70-135	4	35	mg/kg	04.14.2020 13:59	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1020	102	70-135	3	35	mg/kg	04.14.2020 13:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		113		110		70-135	%	04.14.2020 13:59
o-Terphenyl	115		110		107		70-135	%	04.14.2020 13:59

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3123060 — Matrix: Solid — Date Prep: 04.14.2020
MB Sample Id: 7701297-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.14.2020 13:39	

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 658797

LT Environmental, Inc.

Severus CTB

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3123060 | Matrix: Soil | Date Prep: 04.14.2020
Parent Sample Id: 658797-001 | MS Sample Id: 658797-001 S | MSD Sample Id: 658797-001 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)	<50.1	1000	995	100	1000	100	70-135	1	35	mg/kg	04.14.2020 18:52	
Diesel Range Organics (DRO)	<50.1	1000	1150	115	1140	114	70-135	1	35	mg/kg	04.14.2020 18:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		116		70-135	%	04.14.2020 18:52
o-Terphenyl	115		111		70-135	%	04.14.2020 18:52

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3123048 | Matrix: Solid | Date Prep: 04.14.2020
MB Sample Id: 7701300-1-BLK | LCS Sample Id: 7701300-1-BKS | LCSD Sample Id: 7701300-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.122	122	0.127	127	70-130	4	35	mg/kg	04.14.2020 17:32	
Toluene	<0.00200	0.100	0.111	111	0.116	116	70-130	4	35	mg/kg	04.14.2020 17:32	
Ethylbenzene	<0.00200	0.100	0.102	102	0.107	107	71-129	5	35	mg/kg	04.14.2020 17:32	
m,p-Xylenes	<0.00400	0.200	0.195	98	0.207	104	70-135	6	35	mg/kg	04.14.2020 17:32	
o-Xylene	<0.00200	0.100	0.101	101	0.106	106	71-133	5	35	mg/kg	04.14.2020 17:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		107		108		70-130	%	04.14.2020 17:32
4-Bromofluorobenzene	89		85		86		70-130	%	04.14.2020 17:32

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3123048 | Matrix: Soil | Date Prep: 04.14.2020
Parent Sample Id: 658796-001 | MS Sample Id: 658796-001 S | MSD Sample Id: 658796-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.126	126	0.129	129	70-130	2	35	mg/kg	04.14.2020 18:13	
Toluene	<0.00200	0.100	0.116	116	0.118	118	70-130	2	35	mg/kg	04.14.2020 18:13	
Ethylbenzene	<0.00200	0.100	0.108	108	0.110	110	71-129	2	35	mg/kg	04.14.2020 18:13	
m,p-Xylenes	<0.00401	0.200	0.209	105	0.214	107	70-135	2	35	mg/kg	04.14.2020 18:13	
o-Xylene	<0.00200	0.100	0.105	105	0.107	107	71-133	2	35	mg/kg	04.14.2020 18:13	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	04.14.2020 18:13
4-Bromofluorobenzene	87		88		70-130	%	04.14.2020 18:13

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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: 658797

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

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A St. Bldg 1, Unit 222	Address:	3104 E Greene St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	(432) 701-2610 Email:		dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	Severus CTB	Turn Around	
Project Number:	012920052	Routine	☑
P.O. Number:	Spill date - 02/21/2020	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	2.2	Thermometer ID	TM1007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	3

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SS01A	S	04/14/20	1128	3'	1	X	X	X
SS02A			1053	2'		X	X	X
SS03A			1059	2'		X	X	X

Work Order Notes

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

Sample Comments

discrete

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Robert McAfee		4/14/20 15:23	2		
			4		
			6		

Received by OCD: 5/20/2020 10:13:21 AM

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.14.2020 03.23.00 PM

Work Order #: 658797

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 04.14.2020

Checklist reviewed by: Jessica Kramer Date: 04.15.2020

Jessica Kramer

Analytical Report 658521

for

LT Environmental, Inc.

Project Manager: Dan Moir

Severus CTB

012920052

04.13.2020

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

04.13.2020

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

Reference: XENCO Report No(s): **658521**
Severus CTB
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 658521. 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. 658521 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 Manager

A Small Business and Minority Company

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

Sample Cross Reference 658521

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	04.07.2020 14:34	0.5 ft	658521-001
SS02	S	04.07.2020 14:36	0.5 ft	658521-002
SS03	S	04.07.2020 14:38	0.5 ft	658521-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Severus CTB

Project ID: *012920052*
Work Order Number(s): *658521*

Report Date: *04.13.2020*
Date Received: *04.09.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3122755 BTEX by EPA 8021B

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

Certificate of Analysis Summary 658521

LT Environmental, Inc., Arvada, CO

Project Name: Severus CTB

Project Id: 012920052
Contact: Dan Moir
Project Location:

Date Received in Lab: Thu 04.09.2020 16:13
Report Date: 04.13.2020 11:55
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	658521-001		658521-002		658521-003					
	Field Id:	SS01		SS02		SS03					
	Depth:	0.5- ft		0.5- ft		0.5- ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	04.07.2020 14:34		04.07.2020 14:36		04.07.2020 14:38					
BTEX by EPA 8021B	***Extracted:***	04.09.2020 16:49		04.09.2020 16:49		04.09.2020 16:49					
	Analyzed:	04.10.2020 15:17		04.10.2020 15:37		04.10.2020 15:58					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200				
Toluene		<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200				
Ethylbenzene		<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200				
m,p-Xylenes		<0.00402	0.00402	<0.00397	0.00397	<0.00399	0.00399				
o-Xylene		<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200				
Total Xylenes		<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200				
Total BTEX		<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	04.09.2020 16:19		04.09.2020 16:19		04.09.2020 16:19					
	Analyzed:	04.09.2020 20:01		04.09.2020 20:06		04.09.2020 20:24					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		58.5	9.88	<9.96	9.96	<9.98	9.98				
TPH by SW8015 Mod	***Extracted:***	04.09.2020 17:00		04.10.2020 15:30		04.10.2020 15:30					
	Analyzed:	04.10.2020 10:37		04.10.2020 17:43		04.10.2020 16:01					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<49.8	49.8	<50.3	50.3				
Diesel Range Organics (DRO)		209	50.1	127	49.8	60.2	50.3				
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1	<49.8	49.8	<50.3	50.3				
Total GRO-DRO		209	50.1	127	49.8	60.2	50.3				
Total TPH		209	50.1	127	49.8	60.2	50.3				

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

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

Jessica Kramer
Project Manager

Certificate of Analytical Results 658521

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	04.09.2020 16:13
Lab Sample Id:	658521-001	Date Collected:	04.07.2020 14:34	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.09.2020 16:19	Basis:	Wet Weight
Seq Number:	3122585				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**58.5**	9.88	mg/kg	04.09.2020 20:01		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	04.09.2020 17:00	Basis:	Wet Weight
Seq Number:	3122635				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.10.2020 10:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	**209**	50.1	mg/kg	04.10.2020 10:37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.10.2020 10:37	U	1
Total GRO-DRO	PHC628	**209**	50.1	mg/kg	04.10.2020 10:37		1
Total TPH	PHC635	**209**	50.1	mg/kg	04.10.2020 10:37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	04.10.2020 10:37	
o-Terphenyl	84-15-1	132	%	70-135	04.10.2020 10:37	

Certificate of Analytical Results 658521

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	04.09.2020 16:13
Lab Sample Id:	658521-001	Date Collected:	04.07.2020 14:34	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.09.2020 16:49	Basis:	Wet Weight
Seq Number:	3122755				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.10.2020 15:17	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.10.2020 15:17	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.10.2020 15:17	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.10.2020 15:17	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.10.2020 15:17	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.10.2020 15:17	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.10.2020 15:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	04.10.2020 15:17	
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.10.2020 15:17	

Certificate of Analytical Results 658521

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	04.09.2020 16:13
Lab Sample Id:	658521-002	Date Collected:	04.07.2020 14:36	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.09.2020 16:19	Basis:	Wet Weight
Seq Number:	3122585				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	04.09.2020 20:06	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	04.10.2020 15:30	Basis:	Wet Weight
Seq Number:	3122701				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.10.2020 17:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	**127**	49.8	mg/kg	04.10.2020 17:43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.10.2020 17:43	U	1
Total GRO-DRO	PHC628	**127**	49.8	mg/kg	04.10.2020 17:43		1
Total TPH	PHC635	**127**	49.8	mg/kg	04.10.2020 17:43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	04.10.2020 17:43	
o-Terphenyl	84-15-1	133	%	70-135	04.10.2020 17:43	

Certificate of Analytical Results 658521

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	04.09.2020 16:13
Lab Sample Id:	658521-002	Date Collected:	04.07.2020 14:36	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.09.2020 16:49	Basis:	Wet Weight
Seq Number:	3122755				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.10.2020 15:37	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.10.2020 15:37	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.10.2020 15:37	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.10.2020 15:37	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.10.2020 15:37	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.10.2020 15:37	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.10.2020 15:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	04.10.2020 15:37	
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.10.2020 15:37	

Certificate of Analytical Results 658521

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	04.09.2020 16:13
Lab Sample Id:	658521-003	Date Collected:	04.07.2020 14:38	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.09.2020 16:19	Basis:	Wet Weight
Seq Number:	3122585				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	04.09.2020 20:24	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	04.10.2020 15:30	Basis:	Wet Weight
Seq Number:	3122701				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.10.2020 16:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	**60.2**	50.3	mg/kg	04.10.2020 16:01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.10.2020 16:01	U	1
Total GRO-DRO	PHC628	**60.2**	50.3	mg/kg	04.10.2020 16:01		1
Total TPH	PHC635	**60.2**	50.3	mg/kg	04.10.2020 16:01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	04.10.2020 16:01	
o-Terphenyl	84-15-1	133	%	70-135	04.10.2020 16:01	

Certificate of Analytical Results 658521

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	04.09.2020 16:13
Lab Sample Id:	658521-003	Date Collected:	04.07.2020 14:38	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.09.2020 16:49	Basis:	Wet Weight
Seq Number:	3122755				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.10.2020 15:58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.10.2020 15:58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.10.2020 15:58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.10.2020 15:58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.10.2020 15:58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.10.2020 15:58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.10.2020 15:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.10.2020 15:58	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.10.2020 15:58	

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. **ND** Not Detected.

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 658521

LT Environmental, Inc.

Severus CTB

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3122585 — Matrix: Solid — Date Prep: 04.09.2020
MB Sample Id: 7701005-1-BLK — LCS Sample Id: 7701005-1-BKS — LCSD Sample Id: 7701005-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	256	102	256	102	90-110	0	20	mg/kg	04.09.2020 18:17	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3122585 — Matrix: Soil — Date Prep: 04.09.2020
Parent Sample Id: 658518-001 — MS Sample Id: 658518-001 S — MSD Sample Id: 658518-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	235	200	444	105	444	105	90-110	0	20	mg/kg	04.09.2020 18:33	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3122585 — Matrix: Soil — Date Prep: 04.09.2020
Parent Sample Id: 658520-005 — MS Sample Id: 658520-005 S — MSD Sample Id: 658520-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	367	401	776	102	774	102	90-110	0	20	mg/kg	04.09.2020 19:50	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3122635 — Matrix: Solid — Date Prep: 04.09.2020
MB Sample Id: 7700958-1-BLK — LCS Sample Id: 7700958-1-BKS — LCSD Sample Id: 7700958-1-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)	<50.0	1000	877	88	971	97	70-135	10	35	mg/kg	04.09.2020 13:25	
Diesel Range Organics (DRO)	<50.0	1000	952	95	1070	107	70-135	12	35	mg/kg	04.09.2020 13:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		126		119		70-135	%	04.09.2020 13:25
o-Terphenyl	113		112		122		70-135	%	04.09.2020 13:25

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3122701 — Matrix: Solid — Date Prep: 04.10.2020
MB Sample Id: 7701064-1-BLK — LCS Sample Id: 7701064-1-BKS — LCSD Sample Id: 7701064-1-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)	<50.0	1000	950	95	1010	101	70-135	6	35	mg/kg	04.10.2020 15:21	
Diesel Range Organics (DRO)	<50.0	1000	1030	103	1110	111	70-135	7	35	mg/kg	04.10.2020 15:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		124		130		70-135	%	04.10.2020 15:21
o-Terphenyl	98		120		127		70-135	%	04.10.2020 15:21

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

QC Summary 658521

LT Environmental, Inc.

Severus CTB

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3122635 — Matrix: Solid — Date Prep: 04.09.2020
MB Sample Id: 7700958-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.09.2020 13:04	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3122701 — Matrix: Solid — Date Prep: 04.10.2020
MB Sample Id: 7701064-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.10.2020 15:00	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3122635 — Matrix: Soil — Date Prep: 04.09.2020
Parent Sample Id: 658383-006 — MS Sample Id: 658383-006 S — MSD Sample Id: 658383-006 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)	<50.0	999	1010	101	1020	102	70-135	1	35	mg/kg	04.09.2020 14:26	
Diesel Range Organics (DRO)	<50.0	999	1100	110	1130	113	70-135	3	35	mg/kg	04.09.2020 14:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		126		70-135	%	04.09.2020 14:26
o-Terphenyl	128		129		70-135	%	04.09.2020 14:26

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3122701 — Matrix: Soil — Date Prep: 04.10.2020
Parent Sample Id: 658521-003 — MS Sample Id: 658521-003 S — MSD Sample Id: 658521-003 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)	<50.0	999	1040	104	1040	104	70-135	0	35	mg/kg	04.10.2020 16:22	
Diesel Range Organics (DRO)	60.2	999	1160	110	1140	108	70-135	2	35	mg/kg	04.10.2020 16:22	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	131		130		70-135	%	04.10.2020 16:22
o-Terphenyl	132		129		70-135	%	04.10.2020 16:22

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 658521

LT Environmental, Inc.

Severus CTB

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

Seq Number: 3122755 Matrix: Solid Date Prep: 04.09.2020

MB Sample Id: 7700968-1-BLK LCS Sample Id: 7700968-1-BKS LCSD Sample Id: 7700968-1-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	0.104	104	0.107	107	70-130	3	35	mg/kg	04.10.2020 08:49	
Toluene	<0.00200	0.100	0.0983	98	0.101	101	70-130	3	35	mg/kg	04.10.2020 08:49	
Ethylbenzene	<0.00200	0.100	0.0921	92	0.0943	94	71-129	2	35	mg/kg	04.10.2020 08:49	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.194	97	70-135	3	35	mg/kg	04.10.2020 08:49	
o-Xylene	<0.00200	0.100	0.0965	97	0.0990	99	71-133	3	35	mg/kg	04.10.2020 08:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		105		104		70-130	%	04.10.2020 08:49
4-Bromofluorobenzene	94		93		93		70-130	%	04.10.2020 08:49

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

Seq Number: 3122755 Matrix: Soil Date Prep: 04.09.2020

Parent Sample Id: 658383-004 MS Sample Id: 658383-004 S MSD Sample Id: 658383-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0834	83	0.0890	89	70-130	6	35	mg/kg	04.10.2020 09:30	
Toluene	<0.00201	0.100	0.0766	77	0.0811	81	70-130	6	35	mg/kg	04.10.2020 09:30	
Ethylbenzene	<0.00201	0.100	0.0740	74	0.0780	78	71-129	5	35	mg/kg	04.10.2020 09:30	
m,p-Xylenes	<0.00402	0.201	0.155	77	0.164	82	70-135	6	35	mg/kg	04.10.2020 09:30	
o-Xylene	<0.00201	0.100	0.0788	79	0.0837	84	71-133	6	35	mg/kg	04.10.2020 09:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	04.10.2020 09:30
4-Bromofluorobenzene	95		94		70-130	%	04.10.2020 09:30

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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

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

Work Order No: 458521

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A St. Bldg 1, Unit 222	Address:	3104 E Greene St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	(432) 701-2610 Email:		dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	Severus CTB	Turn Around	
Project Number:	012920052	Routine	☑
P.O. Number:		Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	1.6	Thermometer ID	
Received Intact:	(Yes) No	T-NM-004	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Total Containers:	3

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
S501	S	04/07/20	1434	0.5'	1	X	X	X
S502			1436			X	X	X
S503			1438			X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

discrete

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Robert McAfee		4/9/20 10:13	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

Received by OCD: 5/22/2020 10:13:21 AM

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.09.2020 04.13.00 PM

Work Order #: 658521

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#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?	**N/A**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 04.09.2020

Checklist reviewed by: Jessica Kramer Date: 04.10.2020

Jessica Kramer

Certificate of Analysis Summary 660293

LT Environmental, Inc., Arvada, CO

Project Name: Severus CTB

Project Id: 012920052
Contact: Dan Moir
Project Location: Lea

Date Received in Lab: Thu 04.30.2020 12:45
Report Date: 05.04.2020 11:36
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	660293-001					
	Field Id:	FS01					
	Depth:	1.5- ft					
	Matrix:	SOIL					
	Sampled:	04.30.2020 09:33					
BTEX by EPA 8021B	***Extracted:***	04.30.2020 17:30					
	Analyzed:	05.01.2020 02:48					
	Units/RL:	mg/kg	RL				
Benzene		<0.0100	0.0100				
Toluene		<0.0100	0.0100				
Ethylbenzene		<0.0100	0.0100				
m,p-Xylenes		<0.0200	0.0200				
o-Xylene		<0.0100	0.0100				
Total Xylenes		<0.0100	0.0100				
Total BTEX		<0.0100	0.0100				
Chloride by EPA 300	***Extracted:***	04.30.2020 14:00					
	Analyzed:	04.30.2020 15:28					
	Units/RL:	mg/kg	RL				
Chloride		<10.0	10.0				
TPH by SW8015 Mod	***Extracted:***	04.30.2020 17:30					
	Analyzed:	04.30.2020 20:19					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1				
Diesel Range Organics (DRO)		65.5	50.1				
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1				
Total GRO-DRO		65.5	50.1				
Total TPH		65.5	50.1				

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

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

Jessica Kramer
Project Manager

Analytical Report 660293

for

LT Environmental, Inc.

Project Manager: Dan Moir

Severus CTB

012920052

05.04.2020

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

05.04.2020

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

Reference: XENCO Report No(s): **660293**
Severus CTB
Project Address: Lea

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 660293. 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. 660293 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 Manager

A Small Business and Minority Company

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

Sample Cross Reference 660293

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	04.30.2020 09:33	1.5 ft	660293-001

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Severus CTB

Project ID: *012920052*
Work Order Number(s): *660293*

Report Date: *05.04.2020*
Date Received: *04.30.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 660293

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	04.30.2020 12:45
Lab Sample Id:	660293-001	Date Collected:	04.30.2020 09:33	Sample Depth:	1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.30.2020 14:00	Basis:	Wet Weight
Seq Number:	3124744				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	04.30.2020 15:28	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	04.30.2020 17:30	Basis:	Wet Weight
Seq Number:	3124745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.01.2020 15:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	**65.5**	50.1	mg/kg	05.01.2020 15:34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.01.2020 15:34	U	1
Total GRO-DRO	PHC628	**65.5**	50.1	mg/kg	05.01.2020 15:34		1
Total TPH	PHC635	**65.5**	50.1	mg/kg	05.01.2020 15:34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	04.30.2020 20:19	
o-Terphenyl	84-15-1	93	%	70-135	04.30.2020 20:19	

Certificate of Analytical Results 660293

LT Environmental, Inc., Arvada, CO

Severus CTB

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	04.30.2020 12:45
Lab Sample Id:	660293-001	Date Collected:	04.30.2020 09:33	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	04.30.2020 17:30	Basis:	Wet Weight
Seq Number:	3124718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0100	0.0100	mg/kg	05.01.2020 02:48	U	1
Toluene	108-88-3	<0.0100	0.0100	mg/kg	05.01.2020 02:48	U	1
Ethylbenzene	100-41-4	<0.0100	0.0100	mg/kg	05.01.2020 02:48	U	1
m,p-Xylenes	179601-23-1	<0.0200	0.0200	mg/kg	05.01.2020 02:48	U	1
o-Xylene	95-47-6	<0.0100	0.0100	mg/kg	05.01.2020 02:48	U	1
Total Xylenes	1330-20-7	<0.0100	0.0100	mg/kg	05.01.2020 02:48	U	1
Total BTEX		<0.0100	0.0100	mg/kg	05.01.2020 02:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	05.01.2020 02:48	
1,4-Difluorobenzene	540-36-3	116	%	70-130	05.01.2020 02:48	

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. **ND** Not Detected.

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 660293

LT Environmental, Inc.

Severus CTB

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3124744 — Matrix: Solid — Date Prep: 04.30.2020
MB Sample Id: 7702383-1-BLK — LCS Sample Id: 7702383-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Chloride	<10.0	250	256	102	90-110	mg/kg	04.30.2020 14:14	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3124744 — Matrix: Soil — Date Prep: 04.30.2020
Parent Sample Id: 660189-001 — MS Sample Id: 660189-001 S — MSD Sample Id: 660189-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	470	199	689	110	690	110	90-110	0	20	mg/kg	04.30.2020 15:33	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3124745 — Matrix: Solid — Date Prep: 04.30.2020
MB Sample Id: 7702485-1-BLK — LCS Sample Id: 7702485-1-BKS — LCSD Sample Id: 7702485-1-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)	<50.0	1000	1090	109	857	86	70-135	24	35	mg/kg	04.30.2020 12:30	
Diesel Range Organics (DRO)	<50.0	1000	1120	112	961	96	70-135	15	35	mg/kg	04.30.2020 12:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		127		111		70-135	%	04.30.2020 12:30
o-Terphenyl	101		120		108		70-135	%	04.30.2020 12:30

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3124745 — Matrix: Solid — Date Prep: 04.30.2020
MB Sample Id: 7702485-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.30.2020 12:10	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3124745 — Matrix: Soil — Date Prep: 04.30.2020
Parent Sample Id: 660344-001 — MS Sample Id: 660344-001 S — MSD Sample Id: 660344-001 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)	<50.3	1010	916	91	928	93	70-135	1	35	mg/kg	04.30.2020 19:38	
Diesel Range Organics (DRO)	<50.3	1010	1020	101	1040	104	70-135	2	35	mg/kg	04.30.2020 19:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		118		70-135	%	04.30.2020 19:38
o-Terphenyl	115		118		70-135	%	04.30.2020 19:38

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

QC Summary 660293

LT Environmental, Inc.

Severus CTB

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3124718 Matrix: Solid Date Prep: 04.30.2020
MB Sample Id: 7702473-1-BLK LCS Sample Id: 7702473-1-BKS LCSD Sample Id: 7702473-1-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	0.0978	98	0.106	106	70-130	8	35	mg/kg	04.30.2020 18:36	
Toluene	<0.00200	0.100	0.0899	90	0.0974	97	70-130	8	35	mg/kg	04.30.2020 18:36	
Ethylbenzene	<0.00200	0.100	0.0829	83	0.0909	91	71-129	9	35	mg/kg	04.30.2020 18:36	
m,p-Xylenes	<0.00400	0.200	0.164	82	0.178	89	70-135	8	35	mg/kg	04.30.2020 18:36	
o-Xylene	<0.00200	0.100	0.0880	88	0.0951	95	71-133	8	35	mg/kg	04.30.2020 18:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		110		108		70-130	%	04.30.2020 18:36
4-Bromofluorobenzene	102		101		97		70-130	%	04.30.2020 18:36

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3124718 Matrix: Soil Date Prep: 04.30.2020
Parent Sample Id: 660346-003 MS Sample Id: 660346-003 S MSD Sample Id: 660346-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.105	104	0.104	104	70-130	1	35	mg/kg	04.30.2020 19:19	
Toluene	<0.00202	0.101	0.0947	94	0.0956	96	70-130	1	35	mg/kg	04.30.2020 19:19	
Ethylbenzene	<0.00202	0.101	0.0865	86	0.0868	87	71-129	0	35	mg/kg	04.30.2020 19:19	
m,p-Xylenes	<0.00403	0.202	0.166	82	0.168	84	70-135	1	35	mg/kg	04.30.2020 19:19	
o-Xylene	<0.00202	0.101	0.0836	83	0.0843	84	71-133	1	35	mg/kg	04.30.2020 19:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		107		70-130	%	04.30.2020 19:19
4-Bromofluorobenzene	100		107		70-130	%	04.30.2020 19:19

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

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Chain of Custody

XENCO LABORATORIES

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

Work Order No: 6060293

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849 Email:		wmather@ltenv.com, dmoir@ltenv.com

Work Order Comments

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

Project Name:	Severus CTB	Turn Around	
Project Number:	012920052	Routine	☑
P.O. Number:	Lea	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):	3.6	Thermometer ID		
Received Intact:	(Yes) No		TNM007	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:	1	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS01	s	4/30/2020	9:33	1.5'	1	x	x	x

Work Order Notes

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

Sample Comments

composite

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		4/30/20 12:45	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

Received by OCD: 5/20/2020 10:13:21 AM
Final 1.001
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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.30.2020 12.45.00 PM

Work Order #: 660293

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**Yes**	
#6*Custody Seals Signed and dated?	**Yes**	
#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**	Samples received in bulk containers.
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 04.30.2020

Checklist reviewed by: Jessica Kramer Date: 05.01.2020

Jessica Kramer