

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	NRM2021847858
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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)

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


Cause of Release

Incident ID	NRM2021847858
District RP	
Facility ID	
Application ID	

<p>Was this a major release as defined by 19.15.29.7(A) NMAC?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>If YES, for what reason(s) does the responsible party consider this a major release?</p>
<p>If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?</p>	

Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: _____	Title: _____
Signature:  _____	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u> Received by: <u>Ramona Marcus</u> Date: <u>8/5/2020</u>	

NRM2021847858

Location:	JRU 119 Flowline	
Spill Date:	7/23/2020	
Area 1		
Approximate Area =	814.00	sq. ft.
Average Saturation (or depth) of spill =	24.00	inches
Average Porosity Factor =	0.15	
VOLUME OF LEAK		
Total Crude Oil =	0.03	bbls
Total Produced Water =	43.46	bbls

TOTAL VOLUME OF LEAK		
Total Crude Oil =	0.03	bbls
Total Produced Water =	43.46	bbls
TOTAL VOLUME RECOVERED		
Total Crude Oil =	0.00	bbls
Total Produced Water =	0.00	bbls

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

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

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

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

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

State of New Mexico
Oil Conservation Division

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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: _____

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

OCD Only

Received by: Cristina Eads Date: 10/20/2020

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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: _____

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

OCD Only

Received by: Cristina Eads Date: 10/20/2020

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: 12/23/2020

Printed Name: Cristina Eads Title: Environmental Specialist



LT Environmental, Inc.

3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

October 20, 2020

District 2
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

**RE: Closure Request
JRU 119
Incident Number NRM2021847858
Eddy 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, soil sampling, and excavation activities at the JRU 119 (Site) in Unit G, Section 17, Township 23 South, Range 31 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, soil sampling, and excavation activities was to address impacts to soil resulting from a release of crude oil and produced water at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this Closure Request and requesting no further action (NFA) for Incident Number NRM2021847858.

RELEASE BACKGROUND

On July 23, 2020, a corrosion hole in a steel flowline resulted in the release of 0.03 barrels (bbls) of crude oil and 43.46 bbls of produced water in the pasture area adjacent to the flowline. No fluids were recovered. XTO immediately reported the release to the New Mexico Oil Conservation Division (NMOCD) via email on July 24, 2020 and submitted a Release Notification Form C-141 on August 4, 2020. The release was assigned Incident Number NRM2021847858.

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 closest permitted groundwater well with depth to groundwater data is United States Geologic Survey (USGS) well 321809103481801, located approximately 0.5 miles southwest of the Site. The groundwater well has a reported depth to groundwater of 128 feet bgs and a total depth of 354 feet bgs; the depth to water was most recently measured in January 2013. All wells used for depth to groundwater determination are depicted on Figure 1 and are referenced in Attachment 1. The closest



continuously flowing water or significant watercourse to the Site is an unnamed dry wash, located approximately 1.6 miles northwest 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 designation area). Site receptors are identified on Figure 1.

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

A reclamation closure criteria of 600 mg/kg chloride and 100 mg/kg TPH was applied to the top four feet of the pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top four feet of areas that will be reclaimed following remediation.

INITIAL SITE ASSESSMENT AND ANALYTICAL RESULTS

On August 6, 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 assessment soil samples (SS01 through SS03) within the release extent from 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.

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 transported 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, and



TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for preliminary soil samples SS01 through SS03 indicated that TPH-GRO/TPH-DRO and TPH concentrations exceeded the Closure Criteria. Additionally, TPH and chloride concentrations exceeded the reclamation criteria applied to the top four feet. Based on visible staining in the release area, field screening activities, and laboratory analytical results for the preliminary soil samples, excavation of impacted soil was warranted.

EXCAVATION ACTIVITIES

Between September 21, 2020 and September 30, 2020, LTE personnel returned to the Site to oversee excavation activities as indicated by visual observations, field screening activities, and laboratory analytical results for the preliminary soil samples. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Following removal of impacted soil, LTE collected 5-point composite soil samples at least every 200 square feet from the sidewalls and floor of the excavations. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS04 were collected from the floor of the excavation at depths ranging from 7 feet to 8 feet bgs. Composite sidewall soil samples SW01 through SW07 were collected from the sidewalls of the excavation at depths ranging from ground surface to the bottom of the excavation (7 feet to 8 feet bgs). On October 16, 2020, additional composite samples were collected from the excavation sidewall area represented by sidewall sample SW04. The samples were collected at depth intervals of 0 to 4 feet bgs and 4 feet to 7 feet bgs to confirm chloride concentrations in the top four feet were compliant with the reclamation criteria. The excavation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico. The excavation extent and final excavation soil sample locations are presented on Figure 3. Photographic documentation was conducted during the visit to the Site. A photographic log is included in Attachment 2.

The excavation measured approximately 730 square feet. A total of approximately 190 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility located in Hobbs, New Mexico. After completion of confirmation sampling, the excavation was secured with fencing.

ANALYTICAL RESULTS

Laboratory analytical results for preliminary soil samples SS01 through SS03 indicated that TPH-GRO/TPH-DRO and TPH concentrations exceeded the Closure Criteria, and TPH and chloride concentrations exceeded the reclamation criteria. Based on the laboratory analytical results, impacted soil was excavated.

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Laboratory analytical results for excavation soil samples FS01 through FS04 and SW01 through SW07, collected from the final excavation extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. In addition, confirmation soil samples collected in the top four feet of pasture areas were compliant with the reclamation criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 3.

CONCLUSIONS

Site assessment and excavation activities were conducted to address the July 23, 2020, release of produced water and crude oil. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, excavation soil samples collected in the pasture from the top four feet of the subsurface were compliant with the reclamation criteria. Based on the excavation soil sample analytical results, no further remediation was required. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. The pasture excavation will be re-seeded with an approved BLM seed mixture.

Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been determined to be greater than 100 feet bgs based and no other sensitive receptors were identified near the release extent. LTE and XTO believe the remedial actions completed are protective of human health, the environment, and groundwater. XTO requests no further action for Incident Number NRM2021847858.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Elizabeth Naka
Staff Environmental Scientist

Ashley L Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
United States Bureau of Land Management – New Mexico
Robert Hamlet, NMOCD



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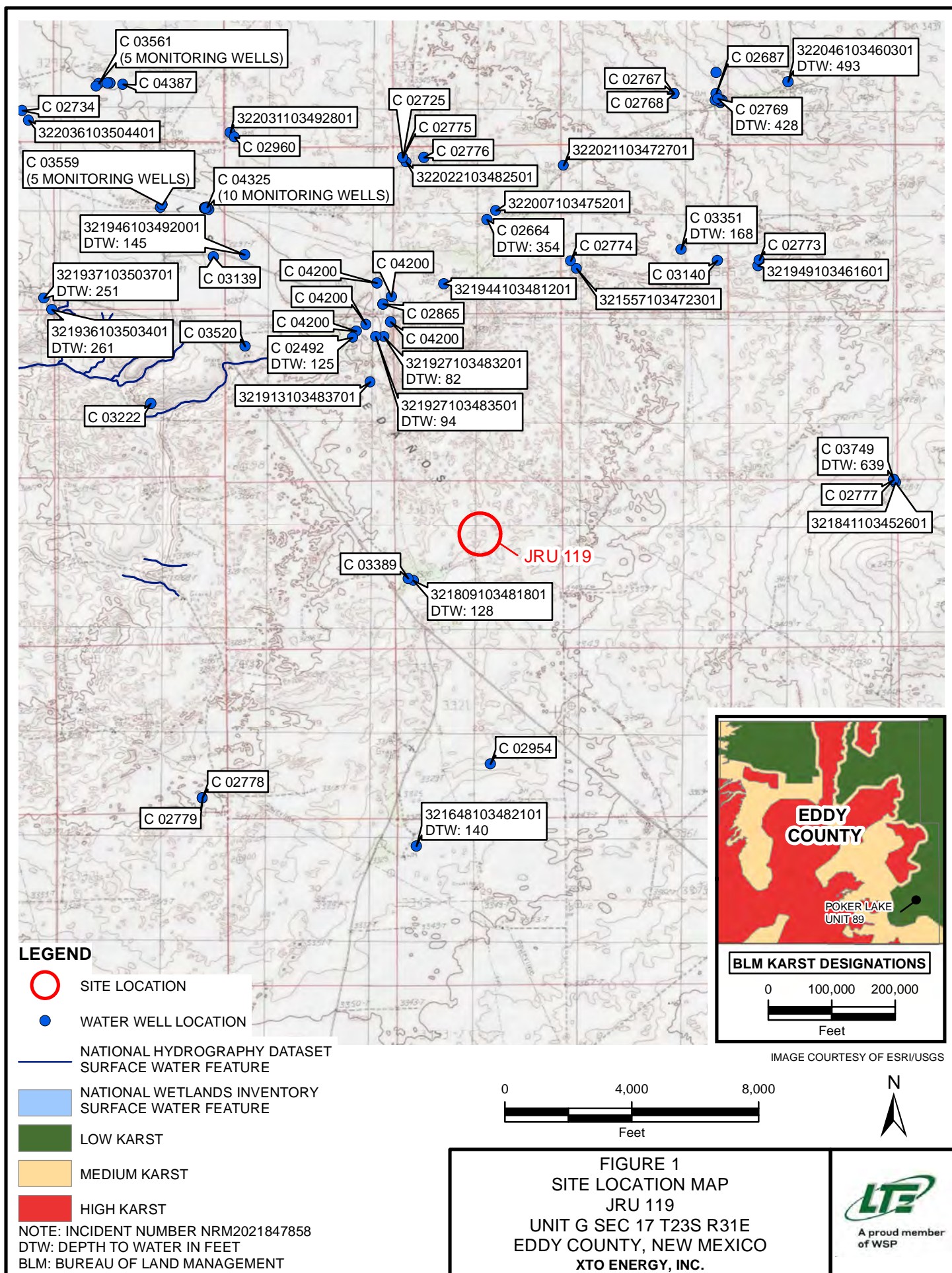
Victoria Venegas, NMOCD

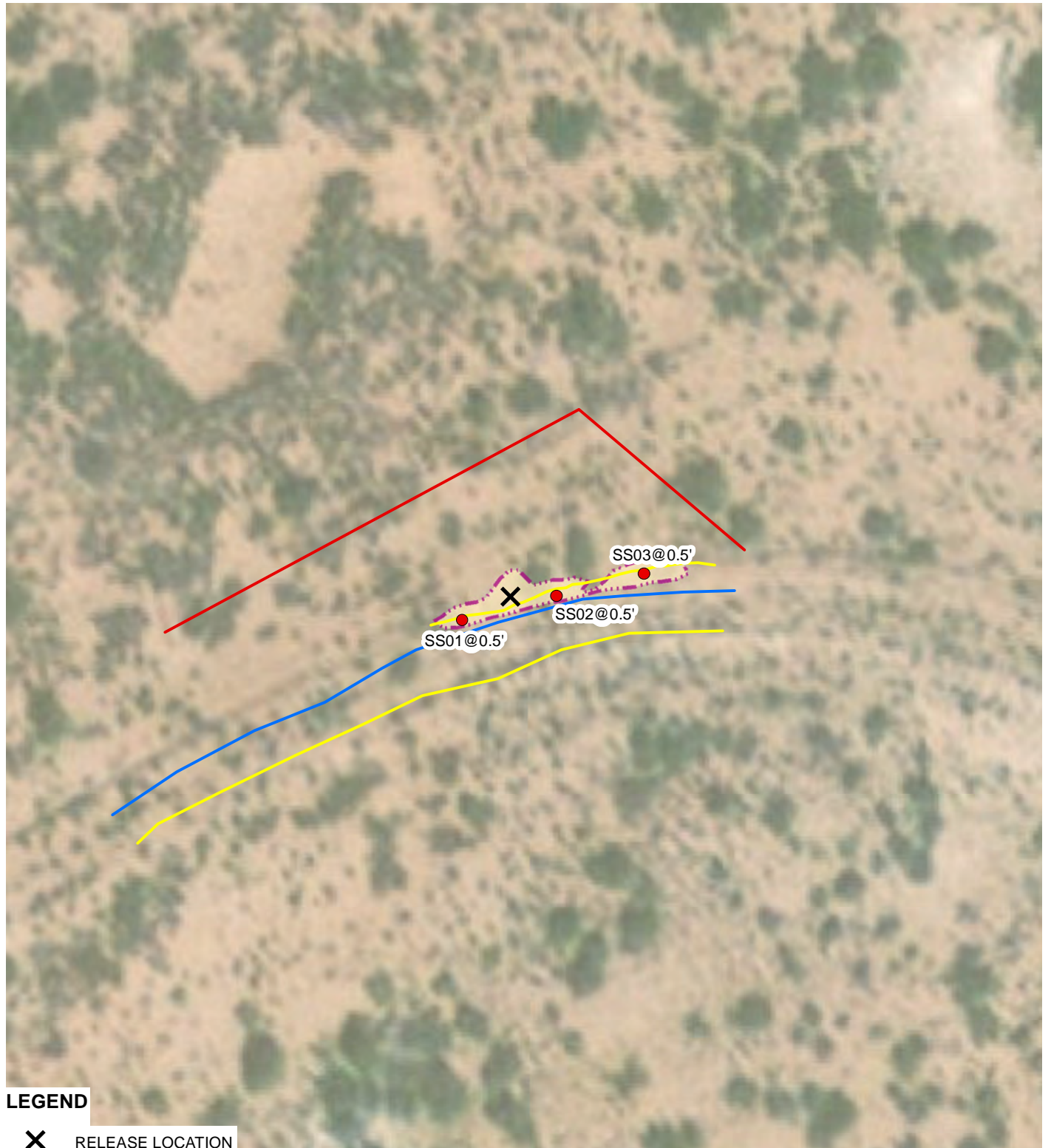
Attachments:

- Figure 1 Site Receptor Map
- Figure 2 Preliminary Soil Sample Locations
- Figure 3 Excavation Soil Sample Locations
- Table 1 Soil Analytical Results
- Attachment 1 Referenced Well Records
- Attachment 2 Photographic Log
- Attachment 3 Laboratory Analytical Reports

FIGURES





**LEGEND**

RELEASE LOCATION

PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS
EXCEEDING APPLICABLE CLOSURE CRITERIA

ELECTRIC LINE



GAS LINE



WATER LINE



RELEASE EXTENT

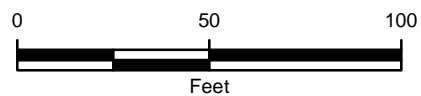
NOTE: INCIDENT NUMBER NRM2021847858
SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

IMAGE COURTESY OF ESRI



FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
 JRU 119
 UNIT G SEC 17 T23S R31E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



**LEGEND**

- RELEASE LOCATION
- FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- SIDEWALL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

ELECTRIC LINE

GAS LINE

WATER LINE

RELEASE EXTENT

EXCAVATION EXTENT

NOTE: INCIDENT NUMBER NRM2021847858

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

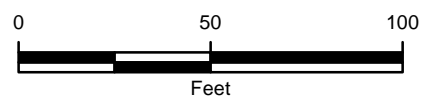


FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
 JRU 119
 UNIT G SEC 17 T23S R31E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



TABLES



**TABLE 1
SOIL ANALYTICAL RESULTS**

**JRU 119
INCIDENT NUMBER NRM2021847858
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	08/06/2020	0.0528	0.212	0.0736	0.278	0.616	<300	34,000	5,510	34,000	39,500	4,550
SS02	0.5	08/06/2020	<0.100	2.84	3.09	15.6	21.5	874	26,600	3,650	27,500	31,100	14,400
SS03	0.5	08/06/2020	<0.00676	0.210	0.301	1.68	2.19	<251	10,900	1,230	10,900	12,100	5,270
SW01	0 - 8	09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	82.7	<50.0	82.7	82.7	49.7
SW02	0 - 7	09/30/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	91.9	<50.1	91.9	91.9	34.3
SW03	0 - 7	09/30/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	94.1
SW04	0 - 7	09/30/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	146	<50.2	146	146	5,850
SW04	0 - 4	10/16/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	12.0
SW04	4 - 7	10/16/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	159	<50.3	159	159	15,000
SW05	0 - 7	09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	101
SW06	0 - 7	09/30/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	182
SW07	0 - 8	09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	54.1	<50.0	54.1	54.1	339
FS01	8	09/30/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	249	<50.2	249	249	17,700
FS02	7	09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	112	<50.3	112	112	8,300
FS03	7	09/30/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	104	<49.8	104	104	8,370
FS04	7	09/30/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	116	<50.2	116	116	8,150

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

TEXT - indicates soil removed during excavation activities





New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
C	02492 POD2	3	2	2	07	23S	31E	611767	3576996

Driller License: 1509 **Driller Company:** BMS DRILLING COMPANY

Driller Name: ROYBAL, JOE D. (LD)

Drill Start Date: 05/14/2012 **Drill Finish Date:** 05/31/2012 **Plug Date:**

Log File Date: 08/27/2013 **PCW Rev Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 30 GPM

Casing Size: 6.00 **Depth Well:** 400 feet **Depth Water:** 125 feet

Meter Number: 16563 **Meter Make:** MASTERMETER

Meter Serial Number: 53527168 **Meter Multiplier:** 1.0000

Number of Dials: 9 **Meter Type:** Diversion

Unit of Measure: Gallons **Return Flow Percent:**

Usage Multiplier: **Reading Frequency:**

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount Online
01/01/2015	2015	39508400	A	RPT		0
04/01/2015	2015	47638000	A	RPT		24.949
04/30/2015	2015	51651000	A	RPT		12.315
05/31/2015	2015	56066600	A	RPT		13.551
07/01/2015	2015	58740300	A	RPT		8.205
08/01/2015	2015	62357200	A	RPT		11.100
08/31/2015	2015	66100700	A	RPT		11.488
10/01/2015	2015	69225500	A	RPT		9.590
12/01/2015	2015	76310300	A	RPT		21.742
01/01/2016	2016	76310300	A	RPT		0
02/01/2016	2016	76310300	A	RPT		0
03/02/2016	2016	78841100	A	RPT		7.767
04/01/2016	2016	80952800	A	RPT		6.481
05/01/2016	2016	82055300	A	RPT		3.383
06/01/2016	2016	85605600	A	RPT		10.895
07/01/2016	2016	88115890	A	RPT		7.704
07/02/2016	2016	22996000	A	RPT		0
08/01/2016	2016	23851600	A	RPT		2.626
10/01/2016	2016	29486000	A	RPT		17.291
11/01/2016	2016	29738900	A	RPT		0.776
12/01/2016	2016	29738900	A	RPT		0
12/31/2016	2016	29738900	A	RPT		0

**YTD Meter Amounts:	Year	Amount
	2015	112.940
	2016	56.923

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8/5/20 12:00 PM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
		Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 02664	3	3	2	05	23S	31E	613049	3578138*
<hr/>									
Driller License: 331		Driller Company: SBQ2, LLC DBA STEWART BROTHERS DRILLING CO.							
Driller Name:									
Drill Start Date: 01/20/2004		Drill Finish Date: 02/11/2004				Plug Date:			
Log File Date: 02/20/2004		PCW Rcv Date:				Source: Shallow			
Pump Type:		Pipe Discharge Size:				Estimated Yield:			
Casing Size: 13.00		Depth Well: 4291 feet				Depth Water: 354 feet			

*UTM location was derived from PLSS - see Help

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10/9/20 8:30 AM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)				(quarters are smallest to largest)				(NAD83 UTM in meters)		
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tw	Rng	X	Y			
C	02769 POD2	4	2	4	33	22S	31E	615261	3579312			
Driller License: 331		Driller Company:				SBQ2, LLC DBA STEWART BROTHERS DRILLING CO.						
Driller Name:												
Drill Start Date:	11/02/2011	Drill Finish Date:				11/28/2011		Plug Date:				
Log File Date:	12/14/2011	PCW Rev Date:								Source:	Artesian	
Pump Type:		Pipe Discharge Size:								Estimated Yield:	22 GPM	
Casing Size:	5.50	Depth Well:				753 feet		Depth Water:				428 feet
Water Bearing Stratifications:		Top		Bottom		Description						
		720		746		Limestone/Dolomite/Chalk						
Casing Perforations:		Top		Bottom								
		720		746								

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New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)							
		(quarters are smallest to largest)				(NAD83 UTM in meters)			
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tw	Rng	X	Y
C	03351	4	1	4	04	23S	31E	614917	3577861

Driller License: 421 **Driller Company:** GLENN'S WATER WELL SERVICE

Driller Name: GLENN, CLARK A."CORKY" (LD)

Drill Start Date: 11/20/2007 **Drill Finish Date:** 11/20/2007 **Plug Date:**

Log File Date: 12/04/2007 **PCW Rev Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 25 GPM

Casing Size: 6.63 **Depth Well:** 320 feet **Depth Water:** 168 feet

Water Bearing Stratifications:	Top	Bottom	Description
	240	265	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	152	304

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Well Tag	POD Number	Q64	Q16	Q4	Sec	Tw	Rng	X	Y
C	03749 POD1	2	2	15	23S	31E		616974	3575662 
Driller License: 331		Driller Company:				SBQ2, LLC DBA STEWART BROTHERS DRILLING CO.			
Driller Name:									
Drill Start Date:	07/10/2014	Drill Finish Date:				08/06/2014		Plug Date:	
Log File Date:	09/11/2014	PCW Rcv Date:						Source:	Shallow
Pump Type:		Pipe Discharge Size:						Estimated Yield:	5 GPM
Casing Size:	4.50	Depth Well:				865 feet		Depth Water:	639 feet
x									
Water Bearing Stratifications:				Top	Bottom	Description			
				820	846	Limestone/Dolomite/Chalk			
x									
Casing Perforations:				Top	Bottom				
				820	846				

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site_no list =

- 321927103483501

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USGS 321927103483501 23S.31E.07.22211

Available data for this site

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Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°19'27", Longitude 103°48'35" NAD27

Land-surface elevation 3,302 feet above NAVD88

The depth of the well is 160 feet below land surface.

This well is completed in the Chinle Formation (231CHNL) local aquifer.

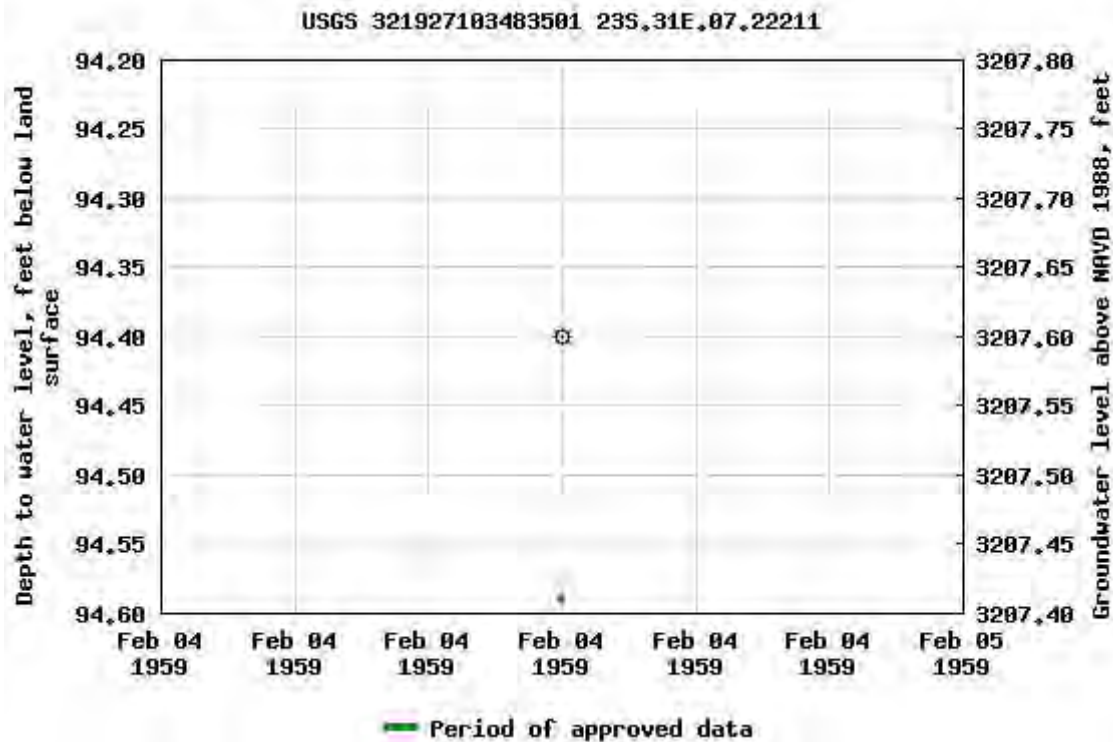
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8.33 0.63 nadww01



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Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°19'36", Longitude 103°50'34" NAD27

Land-surface elevation 3,250 feet above NAVD88

The depth of the well is 320 feet below land surface.

This well is completed in the Rustler Formation (312RSLR) local aquifer.

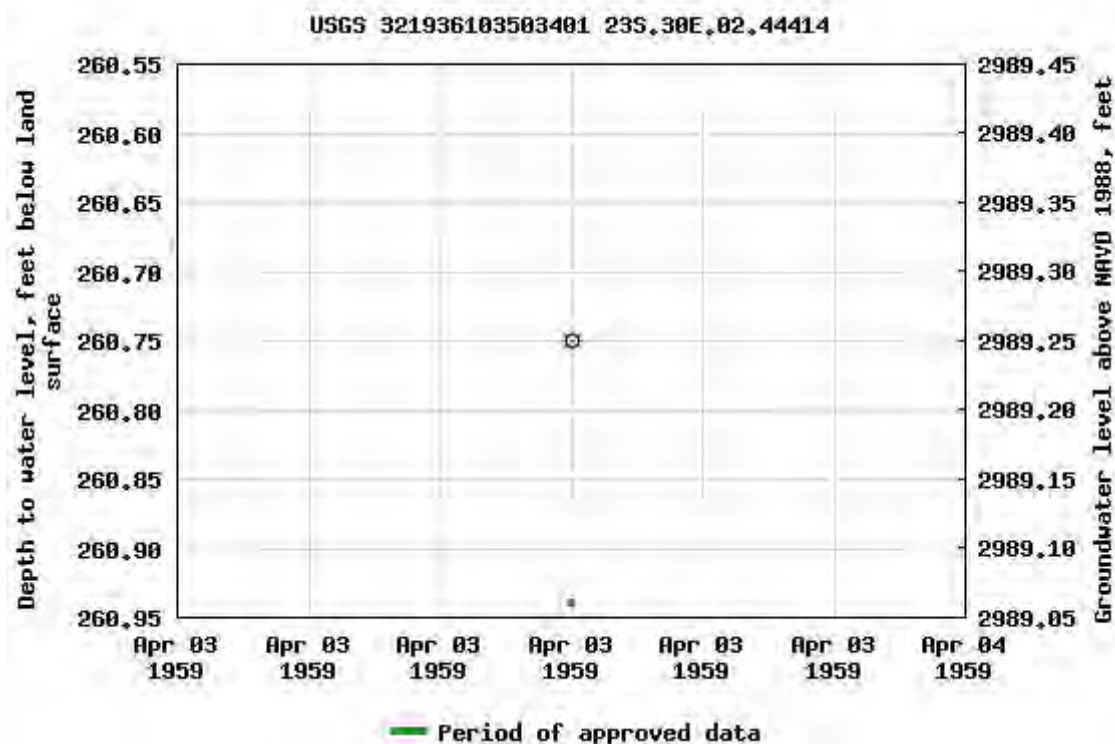
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0.65 0.57 nadww01





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site_no list =

- 321937103503701

Minimum number of levels = 1

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USGS 321937103503701 23S.30E.02.44414 A

Available data for this site

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Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°19'40.0", Longitude 103°50'38.7" NAD83

Land-surface elevation 3,268.00 feet above NGVD29

The depth of the well is 317 feet below land surface.

This well is completed in the Rustler Formation (312RSLR) local aquifer.

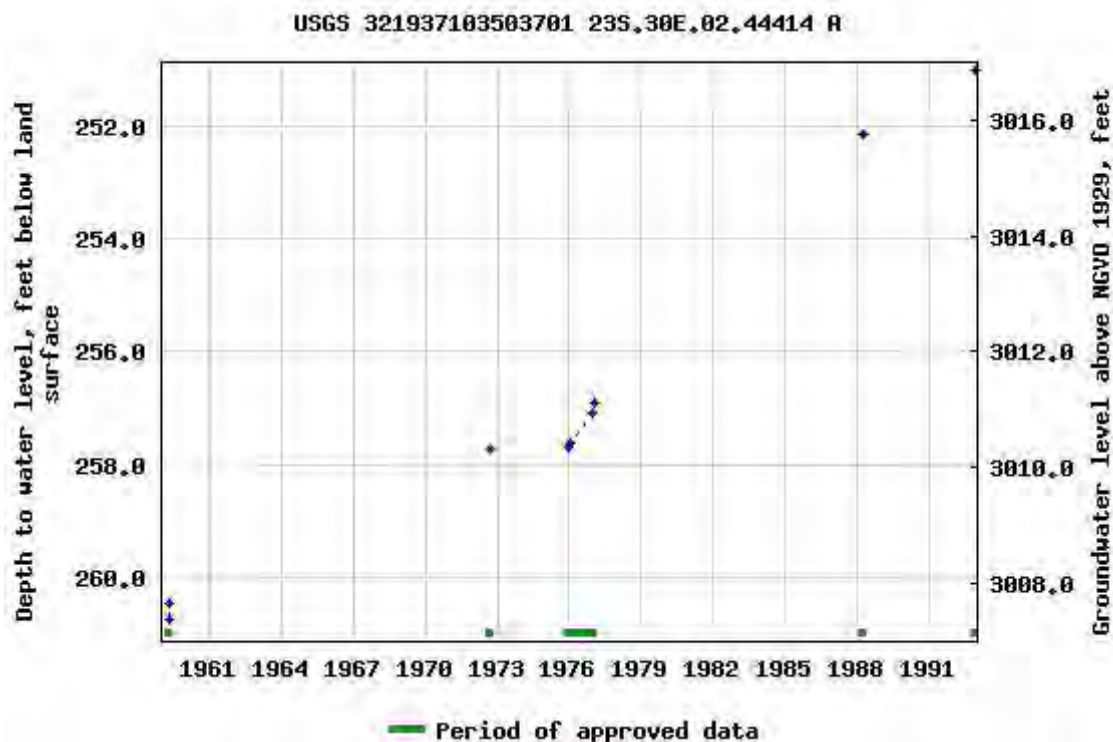
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0.66 0.59 nadww01





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- 321946103492001

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USGS 321946103492001 23S.31E.06.312333

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Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°19'53.3", Longitude 103°49'24.8" NAD83

Land-surface elevation 3,305.00 feet above NGVD29

The depth of the well is 180 feet below land surface.

This well is completed in the Chinle Formation (231CHNL) local aquifer.

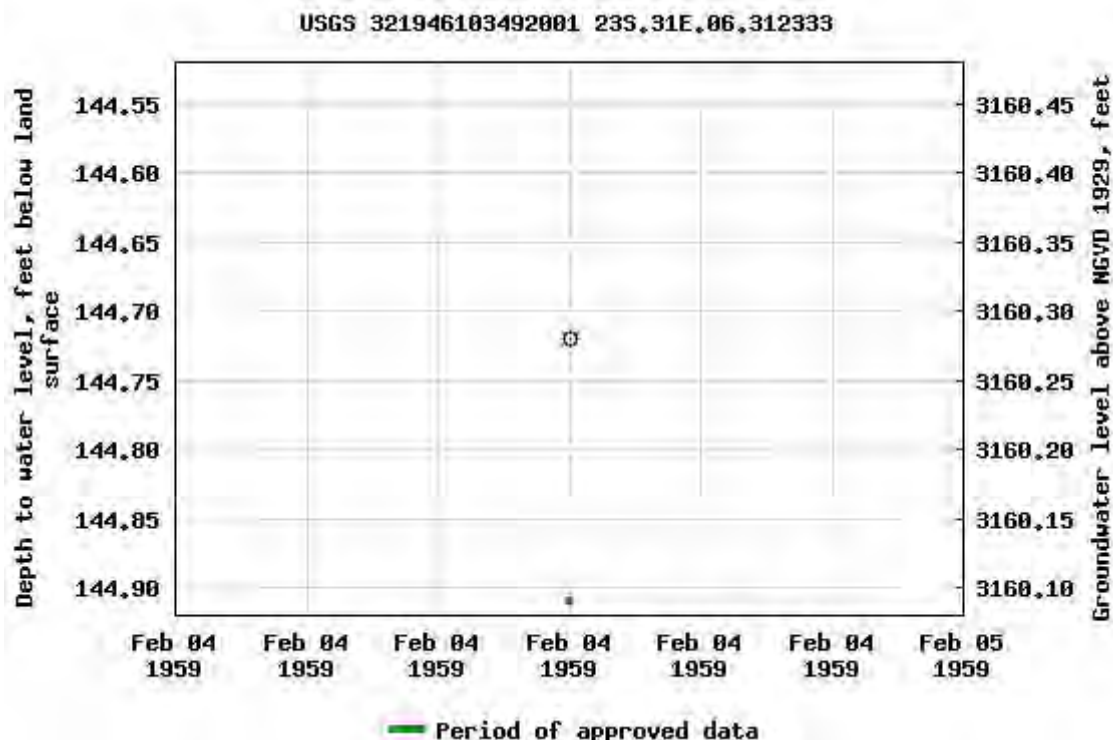
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0.74 0.66 nadww01





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site_no list =

- 322046103460301

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USGS 322046103460301 22S.31E.34.321

Available data for this site

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Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°20'46", Longitude 103°46'03" NAD27

Land-surface elevation 3,448 feet above NGVD29

This well is completed in the Delaware Mountain Group (313DLRM) local aquifer.

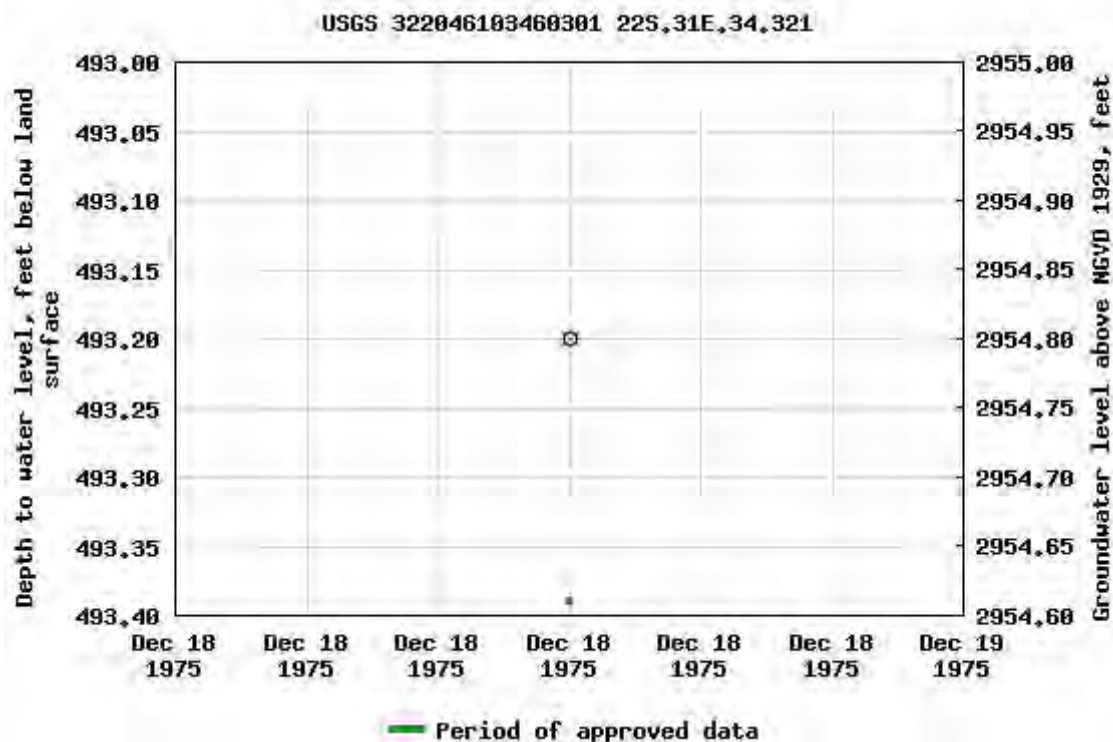
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1.74 0.59 nadww01





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site_no list =

- 321648103482101

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USGS 321648103482101 23S.31E.29.11333

Available data for this site

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Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°16'48", Longitude 103°48'21" NAD27

Land-surface elevation 3,336 feet above NAVD88

The depth of the well is 220 feet below land surface.

This well is completed in the Dewey Lake Redbeds (312DYLK) local aquifer.

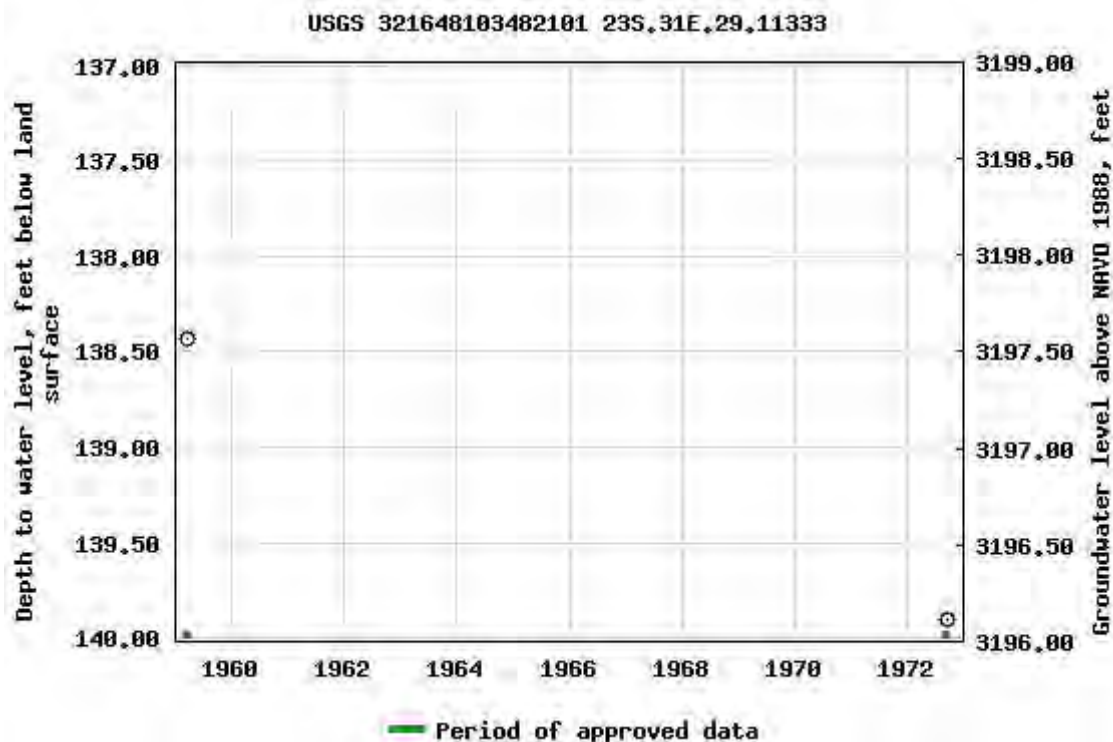
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5.15 0.61 nadww01






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Agency code = usgs

site_no list =

- 321809103481801

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USGS 321809103481801 23S.31E.17.31141

Eddy County, New Mexico

Latitude 32°18'11.3", Longitude 103°48'23.4" NAD83

Land-surface elevation 3,326.00 feet above NGVD29

The depth of the well is 354 feet below land surface.

This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

Table of data
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Reselect period

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measur
1959-02-04		D	110.84			2	P		U	
1987-10-15		D	111.20			2			U	
1992-11-04		D	109.68			2			S	
2013-01-16	16:30 MST	m	128.64			2	R		S	USGS

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Status	P	Site was being pumped.
Status	R	Site had been pumped recently.
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement	S	Measured by personnel of reporting agency.
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Section	Code	Description
---------	------	-------------

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0.32 0.29 nadww01





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- 321927103483201

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USGS 321927103483201 23S.31E.06.44434

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Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°19'27", Longitude 103°48'32" NAD27

Land-surface elevation 3,311 feet above NAVD88

The depth of the well is 160 feet below land surface.

This well is completed in the Chinle Formation (231CHNL) local aquifer.

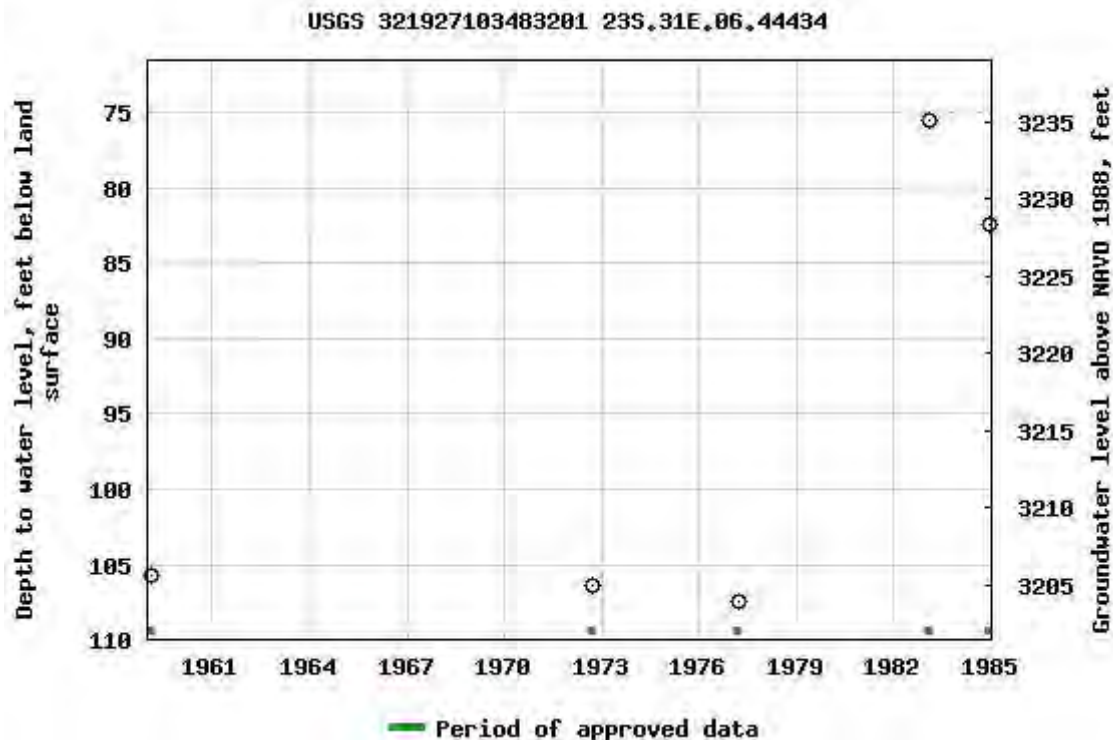
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7.06 0.58 nadww01



ATTACHMENT 2: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: View of release along steel flowline facing northeast.



Photograph 2: View of release along steel flowline facing southwest.



Photograph 3: View of final excavation facing northeast.



Photograph 4: View of final excavation extent facing northeast.

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS



Certificate of Analysis Summary 669384

LT Environmental, Inc., Arvada, CO

Project Name: JRU 119

Project Id: 012920015

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 08.06.2020 13:09

Report Date: 08.10.2020 11:54

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	669384-001	669384-002	669384-003			
	Field Id:	SS001	SS002	SS003			
	Depth:	0.5- ft	0.5- ft	0.5- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	08.06.2020 09:47	08.06.2020 09:49	08.06.2020 09:51			
BTEX by EPA 8021B	Extracted:	08.06.2020 16:47	08.06.2020 16:47	08.06.2020 16:47			
	Analyzed:	08.06.2020 20:02	08.06.2020 20:57	08.06.2020 21:53			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		0.0528 0.0345	<0.100 0.100	<0.00676 0.00676			
Toluene		0.212 0.0345	2.84 0.401	0.210 0.0270			
Ethylbenzene		0.0736 0.0345	3.09 0.401	0.301 0.0270			
m,p-Xylenes		0.192 0.0690	11.1 0.802	1.15 0.0541			
o-Xylene		0.0855 0.0345	4.45 0.401	0.527 0.0270			
Total Xylenes		0.278 0.0345	15.6 0.401	1.68 0.0270			
Total BTEX		0.616 0.0345	21.5 0.100	2.19 0.00676			
Chloride by EPA 300	Extracted:	08.06.2020 16:30	08.06.2020 16:30	08.06.2020 16:30			
	Analyzed:	08.06.2020 18:17	08.06.2020 18:34	08.06.2020 18:40			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		4550 49.4	14400 1000	5270 50.0			
TPH by SW8015 Mod	Extracted:	08.06.2020 17:15	08.06.2020 17:15	08.06.2020 17:15			
	Analyzed:	08.07.2020 17:06	08.07.2020 17:27	08.07.2020 02:10			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<300 300	874 501	<251 251			
Diesel Range Organics (DRO)		34000 999	26600 501	10900 251			
Motor Oil Range Hydrocarbons (MRO)		5510 999	3650 501	1230 251			
Total GRO-DRO		34000 300	27500 501	10900 251			
Total TPH		39500 300	31100 501	12100 251			

BRL - Below Reporting Limit

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





Analytical Report 669384

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 119

012920015

08.10.2020

Collected By: Client

**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



08.10.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **669384**

JRU 119

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 Eurofins Xenco, LLC Report Number(s) 669384. 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 Eurofins Xenco, LLC. 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. 669384 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "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 669384****LT Environmental, Inc., Arvada, CO**

JRU 119

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS001	S	08.06.2020 09:47	0.5 ft	669384-001
SS002	S	08.06.2020 09:49	0.5 ft	669384-002
SS003	S	08.06.2020 09:51	0.5 ft	669384-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 119

Project ID: 012920015
Work Order Number(s): 669384

Report Date: 08.10.2020
Date Received: 08.06.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 669384

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SS001** Matrix: Soil Date Received: 08.06.2020 13:09
 Lab Sample Id: 669384-001 Date Collected: 08.06.2020 09:47 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.06.2020 16:30 Basis: Wet Weight
 Seq Number: 3133867

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4550	49.4	mg/kg	08.06.2020 18:17		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.06.2020 17:15 Basis: Wet Weight
 Seq Number: 3133852

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<300	300	mg/kg	08.07.2020 17:06	U	20
Diesel Range Organics (DRO)	C10C28DRO	34000	999	mg/kg	08.07.2020 17:06		20
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	5510	999	mg/kg	08.07.2020 17:06		20
Total GRO-DRO	PHC628	34000	300	mg/kg	08.07.2020 17:06		20
Total TPH	PHC635	39500	300	mg/kg	08.07.2020 17:06		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	08.07.2020 17:06	
o-Terphenyl	84-15-1	94	%	70-135	08.07.2020 17:06	



Certificate of Analytical Results 669384

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SS001**
Lab Sample Id: 669384-001

Matrix: Soil
Date Collected: 08.06.2020 09:47

Date Received: 08.06.2020 13:09
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 08.06.2020 16:47

Basis: Wet Weight

Seq Number: 3133863

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0528	0.0345	mg/kg	08.06.2020 20:02		1
Toluene	108-88-3	0.212	0.0345	mg/kg	08.06.2020 20:02		1
Ethylbenzene	100-41-4	0.0736	0.0345	mg/kg	08.06.2020 20:02		1
m,p-Xylenes	179601-23-1	0.192	0.0690	mg/kg	08.06.2020 20:02		1
o-Xylene	95-47-6	0.0855	0.0345	mg/kg	08.06.2020 20:02		1
Total Xylenes	1330-20-7	0.278	0.0345	mg/kg	08.06.2020 20:02		1
Total BTEX		0.616	0.0345	mg/kg	08.06.2020 20:02		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.06.2020 20:02		
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.06.2020 20:02		



Certificate of Analytical Results 669384

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SS002** Matrix: Soil Date Received: 08.06.2020 13:09
 Lab Sample Id: 669384-002 Date Collected: 08.06.2020 09:49 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.06.2020 16:30 Basis: Wet Weight
 Seq Number: 3133867

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14400	1000	mg/kg	08.06.2020 18:34		100

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.06.2020 17:15 Basis: Wet Weight
 Seq Number: 3133852

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	874	501	mg/kg	08.07.2020 17:27		10
Diesel Range Organics (DRO)	C10C28DRO	26600	501	mg/kg	08.07.2020 17:27		10
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	3650	501	mg/kg	08.07.2020 17:27		10
Total GRO-DRO	PHC628	27500	501	mg/kg	08.07.2020 17:27		10
Total TPH	PHC635	31100	501	mg/kg	08.07.2020 17:27		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	08.07.2020 17:27	
o-Terphenyl	84-15-1	88	%	70-135	08.07.2020 17:27	



Certificate of Analytical Results 669384

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SS002**
Lab Sample Id: 669384-002

Matrix: Soil
Date Collected: 08.06.2020 09:49

Date Received: 08.06.2020 13:09
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 08.06.2020 16:47

Basis: Wet Weight

Seq Number: 3133863

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.100	0.100	mg/kg	08.06.2020 20:57	U	200
Toluene	108-88-3	2.84	0.401	mg/kg	08.06.2020 20:57		200
Ethylbenzene	100-41-4	3.09	0.401	mg/kg	08.06.2020 20:57		200
m,p-Xylenes	179601-23-1	11.1	0.802	mg/kg	08.06.2020 20:57		200
o-Xylene	95-47-6	4.45	0.401	mg/kg	08.06.2020 20:57		200
Total Xylenes	1330-20-7	15.6	0.401	mg/kg	08.06.2020 20:57		200
Total BTEX		21.5	0.100	mg/kg	08.06.2020 20:57		200
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	08.06.2020 20:57		
4-Bromofluorobenzene	460-00-4	97	%	70-130	08.06.2020 20:57		



Certificate of Analytical Results 669384

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SS003** Matrix: Soil Date Received: 08.06.2020 13:09
 Lab Sample Id: 669384-003 Date Collected: 08.06.2020 09:51 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.06.2020 16:30 Basis: Wet Weight
 Seq Number: 3133867

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5270	50.0	mg/kg	08.06.2020 18:40		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.06.2020 17:15 Basis: Wet Weight
 Seq Number: 3133852

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<251	251	mg/kg	08.07.2020 02:10	U	5
Diesel Range Organics (DRO)	C10C28DRO	10900	251	mg/kg	08.07.2020 02:10		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1230	251	mg/kg	08.07.2020 02:10		5
Total GRO-DRO	PHC628	10900	251	mg/kg	08.07.2020 02:10		5
Total TPH	PHC635	12100	251	mg/kg	08.07.2020 02:10		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	08.07.2020 02:10	
o-Terphenyl	84-15-1	117	%	70-135	08.07.2020 02:10	



Certificate of Analytical Results 669384

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SS003**
Lab Sample Id: 669384-003

Matrix: Soil
Date Collected: 08.06.2020 09:51

Date Received: 08.06.2020 13:09
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 08.06.2020 16:47

Basis: Wet Weight

Seq Number: 3133863

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00676	0.00676	mg/kg	08.06.2020 21:53	U	1
Toluene	108-88-3	0.210	0.0270	mg/kg	08.06.2020 21:53		1
Ethylbenzene	100-41-4	0.301	0.0270	mg/kg	08.06.2020 21:53		1
m,p-Xylenes	179601-23-1	1.15	0.0541	mg/kg	08.06.2020 21:53		1
o-Xylene	95-47-6	0.527	0.0270	mg/kg	08.06.2020 21:53		1
Total Xylenes	1330-20-7	1.68	0.0270	mg/kg	08.06.2020 21:53		1
Total BTEX		2.19	0.00676	mg/kg	08.06.2020 21:53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	93	%	70-130	08.06.2020 21:53	
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.06.2020 21:53	

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



LT Environmental, Inc.

JRU 119

Analytical Method: Chloride by EPA 300

Seq Number: 3133867

MB Sample Id: 7708945-1-BLK

Matrix: Solid

LCS Sample Id: 7708945-1-BKS

Prep Method: E300P

Date Prep: 08.06.2020

LCSD Sample Id: 7708945-1-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	269	108	268	107	90-110	0	20	mg/kg	08.06.2020 18:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3133867

Parent Sample Id: 669384-001

Matrix: Soil

MS Sample Id: 669384-001 S

Prep Method: E300P

Date Prep: 08.06.2020

MSD Sample Id: 669384-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4550	202	4760	104	4760	104	90-110	0	20	mg/kg	08.06.2020 18:23	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3133852

MB Sample Id: 7708910-1-BLK

Matrix: Solid

LCS Sample Id: 7708910-1-BKS

Prep Method: SW8015P

Date Prep: 08.06.2020

LCSD Sample Id: 7708910-1-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	1130	113	1060	106	70-135	6	35	mg/kg	08.06.2020 18:44	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1150	115	70-135	5	35	mg/kg	08.06.2020 18:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		134		122		70-135	%	08.06.2020 18:44
o-Terphenyl	114		123		116		70-135	%	08.06.2020 18:44

Analytical Method: TPH by SW8015 Mod

Seq Number: 3133852

Matrix: Solid

MB Sample Id: 7708910-1-BLK

Prep Method: SW8015P

Date Prep: 08.06.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.06.2020 18:24	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3133852

Matrix: Soil

Parent Sample Id: 669401-018

MS Sample Id: 669401-018 S

Prep Method: SW8015P

Date Prep: 08.06.2020

MSD Sample Id: 669401-018 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)	<49.8	995	997	100	1010	101	70-135	1	35	mg/kg	08.06.2020 19:44	
Diesel Range Organics (DRO)	<49.8	995	1070	108	1080	108	70-135	1	35	mg/kg	08.06.2020 19:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		123		70-135	%	08.06.2020 19:44
o-Terphenyl	118		116		70-135	%	08.06.2020 19:44

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

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

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

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



LT Environmental, Inc.

JRU 119

Analytical Method: BTEX by EPA 8021B

Seq Number: 3133863

MB Sample Id: 7708937-1-BLK

Matrix: Solid

LCS Sample Id: 7708937-1-BKS

Prep Method: SW5035A

Date Prep: 08.06.2020

LCSD Sample Id: 7708937-1-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	0.112	112	0.111	111	70-130	1	35	mg/kg	08.06.2020 17:36	
Toluene	<0.00200	0.100	0.106	106	0.106	106	70-130	0	35	mg/kg	08.06.2020 17:36	
Ethylbenzene	<0.00200	0.100	0.0996	100	0.0988	99	71-129	1	35	mg/kg	08.06.2020 17:36	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.200	100	70-135	1	35	mg/kg	08.06.2020 17:36	
o-Xylene	<0.00200	0.100	0.0996	100	0.0989	99	71-133	1	35	mg/kg	08.06.2020 17:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		99		70-130	%	08.06.2020 17:36
4-Bromofluorobenzene	96		103		104		70-130	%	08.06.2020 17:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3133863

Parent Sample Id: 669401-001

Matrix: Soil

MS Sample Id: 669401-001 S

Prep Method: SW5035A

Date Prep: 08.06.2020

MSD Sample Id: 669401-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.125	124	0.124	124	70-130	1	35	mg/kg	08.06.2020 18:21	
Toluene	<0.00201	0.101	0.128	127	0.127	127	70-130	1	35	mg/kg	08.06.2020 18:21	
Ethylbenzene	<0.00201	0.101	0.120	119	0.119	119	71-129	1	35	mg/kg	08.06.2020 18:21	
m,p-Xylenes	<0.00402	0.201	0.248	123	0.245	123	70-135	1	35	mg/kg	08.06.2020 18:21	
o-Xylene	<0.00201	0.101	0.120	119	0.118	118	71-133	2	35	mg/kg	08.06.2020 18:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	08.06.2020 18:21
4-Bromofluorobenzene	104		103		70-130	%	08.06.2020 18:21

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

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

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

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



Chain of Custody

Work Order No: 609384

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Phoenix AZ (480) 335-0900 Atlanta GA (770) 449-8800 Tampa FL (813) 975-392-(7550)
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

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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 Street	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	wmnaither@ltenv.com, dmoir@ltenv.com

Work Order Comments	
Program: UST/PST	<input type="checkbox"/> RP <input type="checkbox"/> Crownfields <input checked="" type="checkbox"/> RC <input type="checkbox"/> \$perfund
State of Project:	
Reporting: Level II	<input type="checkbox"/> Level III <input type="checkbox"/> ST/UST <input type="checkbox"/> RP <input type="checkbox"/> Level IV
Deliverables: EDD	<input type="checkbox"/> ADAPT <input type="checkbox"/> Other:

[illegible]

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
<i>Circle Method(s) and Metal(s) to be analyzed</i>			TCLP / SPLP	6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Tl	U												

Note: 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.

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08.06.2020 01.09.00 PM

Work Order #: 669384

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : TNM 007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.8
#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:



Martha Castro

Date: 08.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 08.07.2020

Certificate of Analysis Summary 674002



LT Environmental, Inc., Arvada, CO

Project Name: JRU 119 Flowline

Project Id: 012920115

Date Received in Lab: Wed 09.30.2020 15:20

Contact: Dan Moir

Report Date: 10.12.2020 08:50

Project Location: Eddy County

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	674002-001	674002-002	674002-003	674002-004	674002-005	674002-006
	<i>Field Id:</i>	SW01	SW02	SW03	SW04	FS01	FS02
	<i>Depth:</i>	0-8 ft	0-7 ft	0-7 ft	0-7 ft	8- ft	7- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	09.30.2020 12:05	09.30.2020 12:10	09.30.2020 12:15	09.30.2020 12:20	09.30.2020 12:45	09.30.2020 12:50
BTEX by EPA 8021B	<i>Extracted:</i>	09.30.2020 17:15	09.30.2020 17:15	09.30.2020 17:15	09.30.2020 17:15	09.30.2020 17:15	09.30.2020 17:40
	<i>Analyzed:</i>	10.01.2020 07:00	10.01.2020 07:23	10.01.2020 07:45	10.01.2020 08:07	10.01.2020 08:30	10.01.2020 00:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00404 0.00404	<0.00403 0.00403	<0.00396 0.00396	<0.00402 0.00402	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	09.30.2020 17:55	09.30.2020 17:55	09.30.2020 17:55	09.30.2020 17:55	09.30.2020 17:55	09.30.2020 17:55
	<i>Analyzed:</i>	09.30.2020 20:44	09.30.2020 21:00	09.30.2020 21:06	09.30.2020 21:11	09.30.2020 21:17	09.30.2020 21:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		49.7 9.94	34.3 9.92	94.1 9.98	5850 200	17700 200	8300 200
TPH by SW8015 Mod	<i>Extracted:</i>	09.30.2020 16:00	09.30.2020 16:00	09.30.2020 16:00	09.30.2020 16:00	09.30.2020 16:00	09.30.2020 16:00
	<i>Analyzed:</i>	09.30.2020 18:49	09.30.2020 19:09	09.30.2020 19:30	09.30.2020 19:49	09.30.2020 20:10	09.30.2020 20:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.3 50.3
Diesel Range Organics (DRO)		82.7 50.0	91.9 50.1	<50.2 50.2	146 50.2	249 50.2	112 50.3
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.3 50.3
Total GRO-DRO		82.7 50.0	91.9 50.1	<50.2 50.2	146 50.2	249 50.2	112 50.3
Total TPH		82.7 50.0	91.9 50.1	<50.2 50.2	146 50.2	249 50.2	112 50.3

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 674002



LT Environmental, Inc., Arvada, CO

Project Name: JRU 119 Flowline

Project Id: 012920115

Date Received in Lab: Wed 09.30.2020 15:20

Contact: Dan Moir

Report Date: 10.12.2020 08:50

Project Location: Eddy County

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	674002-007	674002-008	674002-009	674002-010	674002-011	
	Field Id:	FS03	FS04	SW05	SW06	SW07	
	Depth:	7- ft	7- ft	0-7 ft	0-7 ft	0-8 ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	09.30.2020 12:55	09.30.2020 13:00	09.30.2020 13:30	09.30.2020 13:35	09.30.2020 13:40	
BTEX by EPA 8021B	Extracted:	09.30.2020 17:40	09.30.2020 17:40	09.30.2020 17:40	09.30.2020 17:40	09.30.2020 17:40	
	Analyzed:	10.01.2020 01:14	10.01.2020 01:36	10.01.2020 01:59	10.01.2020 02:21	10.01.2020 02:43	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	
Toluene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	
Ethylbenzene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	
m,p-Xylenes		<0.00397 0.00397	<0.00403 0.00403	<0.00401 0.00401	<0.00397 0.00397	<0.00399 0.00399	
o-Xylene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	
Total Xylenes		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	
Total BTEX		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	
Chloride by EPA 300	Extracted:	09.30.2020 17:55	09.30.2020 17:55	09.30.2020 17:55	09.30.2020 17:55	09.30.2020 17:55	
	Analyzed:	09.30.2020 21:39	09.30.2020 21:44	09.30.2020 21:50	09.30.2020 21:55	09.30.2020 22:01	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		8370 200	8150 199	101 9.92	182 9.98	339 9.94	
TPH by SW8015 Mod	Extracted:	09.30.2020 17:30	09.30.2020 17:30	09.30.2020 17:30	09.30.2020 17:30	09.30.2020 17:30	
	Analyzed:	10.01.2020 00:12	10.01.2020 00:32	10.01.2020 00:52	10.01.2020 01:13	10.01.2020 01:33	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<50.2 50.2	<50.2 50.2	<49.8 49.8	<50.0 50.0	
Diesel Range Organics (DRO)		104 49.8	116 50.2	<50.2 50.2	<49.8 49.8	54.1 50.0	
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.2 50.2	<50.2 50.2	<49.8 49.8	<50.0 50.0	
Total GRO-DRO		104 49.8	116 50.2	<50.2 50.2	<49.8 49.8	54.1 50.0	
Total TPH		104 49.8	116 50.2	<50.2 50.2	<49.8 49.8	54.1 50.0	

BRL - Below Reporting Limit

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



Analytical Report 674002

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 119 Flowline

012920115

10.12.2020

Collected By: Client

**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



10.12.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **674002**

JRU 119 Flowline

Project Address: Eddy County

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 Eurofins Xenco, LLC Report Number(s) 674002. 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 Eurofins Xenco, LLC. 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. 674002 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "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 674002****LT Environmental, Inc., Arvada, CO**

JRU 119 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	09.30.2020 12:05	0 - 8 ft	674002-001
SW02	S	09.30.2020 12:10	0 - 7 ft	674002-002
SW03	S	09.30.2020 12:15	0 - 7 ft	674002-003
SW04	S	09.30.2020 12:20	0 - 7 ft	674002-004
FS01	S	09.30.2020 12:45	8 ft	674002-005
FS02	S	09.30.2020 12:50	7 ft	674002-006
FS03	S	09.30.2020 12:55	7 ft	674002-007
FS04	S	09.30.2020 13:00	7 ft	674002-008
SW05	S	09.30.2020 13:30	0 - 7 ft	674002-009
SW06	S	09.30.2020 13:35	0 - 7 ft	674002-010
SW07	S	09.30.2020 13:40	0 - 8 ft	674002-011



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 119 Flowline

Project ID: 012920115
Work Order Number(s): 674002

Report Date: 10.12.2020
Date Received: 09.30.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 674002

LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW01** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-001 Date Collected: 09.30.2020 12:05 Sample Depth: 0 - 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	49.7	9.94	mg/kg	09.30.2020 20:44		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 16:00 % Moisture:
 Seq Number: 3138526 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.30.2020 18:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	82.7	50.0	mg/kg	09.30.2020 18:49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.30.2020 18:49	U	1
Total GRO-DRO	PHC628	82.7	50.0	mg/kg	09.30.2020 18:49		1
Total TPH	PHC635	82.7	50.0	mg/kg	09.30.2020 18:49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	09.30.2020 18:49	
o-Terphenyl	84-15-1	113	%	70-135	09.30.2020 18:49	



Certificate of Analytical Results 674002

LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW01**
Lab Sample Id: 674002-001

Matrix: Soil
Date Collected: 09.30.2020 12:05

Date Received: 09.30.2020 15:20
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:15

% Moisture:
Basis: Wet Weight

Seq Number: 3138585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.01.2020 07:00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.01.2020 07:00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.01.2020 07:00	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.01.2020 07:00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.01.2020 07:00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.01.2020 07:00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.01.2020 07:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.01.2020 07:00	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.01.2020 07:00	



Certificate of Analytical Results 674002

LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW02** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-002 Date Collected: 09.30.2020 12:10 Sample Depth: 0 - 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.3	9.92	mg/kg	09.30.2020 21:00		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 16:00 % Moisture:
 Seq Number: 3138526 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	09.30.2020 19:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	91.9	50.1	mg/kg	09.30.2020 19:09		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	09.30.2020 19:09	U	1
Total GRO-DRO	PHC628	91.9	50.1	mg/kg	09.30.2020 19:09		1
Total TPH	PHC635	91.9	50.1	mg/kg	09.30.2020 19:09		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	09.30.2020 19:09	
o-Terphenyl	84-15-1	117	%	70-135	09.30.2020 19:09	



Certificate of Analytical Results 674002

LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW02**
Lab Sample Id: 674002-002

Matrix: Soil
Date Collected: 09.30.2020 12:10

Date Received: 09.30.2020 15:20
Sample Depth: 0 - 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:15

% Moisture:
Basis: Wet Weight

Seq Number: 3138585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.01.2020 07:23	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.01.2020 07:23	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.01.2020 07:23	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.01.2020 07:23	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.01.2020 07:23	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.01.2020 07:23	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.01.2020 07:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.01.2020 07:23	
1,4-Difluorobenzene	540-36-3	96	%	70-130	10.01.2020 07:23	



Certificate of Analytical Results 674002

LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW03** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-003 Date Collected: 09.30.2020 12:15 Sample Depth: 0 - 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	94.1	9.98	mg/kg	09.30.2020 21:06		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 16:00 % Moisture:
 Seq Number: 3138526 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.30.2020 19:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.30.2020 19:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.30.2020 19:30	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	09.30.2020 19:30	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.30.2020 19:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.30.2020 19:30	
o-Terphenyl	84-15-1	84	%	70-135	09.30.2020 19:30	



Certificate of Analytical Results 674002

LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW03**
Lab Sample Id: 674002-003

Matrix: Soil
Date Collected: 09.30.2020 12:15

Date Received: 09.30.2020 15:20
Sample Depth: 0 - 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:15

% Moisture:
Basis: Wet Weight

Seq Number: 3138585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.01.2020 07:45	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.01.2020 07:45	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.01.2020 07:45	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.01.2020 07:45	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.01.2020 07:45	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.01.2020 07:45	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.01.2020 07:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	10.01.2020 07:45		
1,4-Difluorobenzene	540-36-3	96	%	70-130	10.01.2020 07:45		



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LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW04** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-004 Date Collected: 09.30.2020 12:20 Sample Depth: 0 - 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5850	200	mg/kg	09.30.2020 21:11		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 16:00 % Moisture:
 Seq Number: 3138526 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.30.2020 19:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	146	50.2	mg/kg	09.30.2020 19:49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.30.2020 19:49	U	1
Total GRO-DRO	PHC628	146	50.2	mg/kg	09.30.2020 19:49		1
Total TPH	PHC635	146	50.2	mg/kg	09.30.2020 19:49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.30.2020 19:49	
o-Terphenyl	84-15-1	93	%	70-135	09.30.2020 19:49	



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LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW04**
Lab Sample Id: 674002-004

Matrix: Soil
Date Collected: 09.30.2020 12:20

Date Received: 09.30.2020 15:20
Sample Depth: 0 - 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:15

% Moisture:
Basis: Wet Weight

Seq Number: 3138585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.01.2020 08:07	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.01.2020 08:07	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.01.2020 08:07	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.01.2020 08:07	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.01.2020 08:07	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.01.2020 08:07	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.01.2020 08:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	10.01.2020 08:07		
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.01.2020 08:07		



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JRU 119 Flowline

Sample Id: **FS01** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-005 Date Collected: 09.30.2020 12:45 Sample Depth: 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17700	200	mg/kg	09.30.2020 21:17		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 16:00 % Moisture:
 Seq Number: 3138526 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.30.2020 20:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	249	50.2	mg/kg	09.30.2020 20:10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.30.2020 20:10	U	1
Total GRO-DRO	PHC628	249	50.2	mg/kg	09.30.2020 20:10		1
Total TPH	PHC635	249	50.2	mg/kg	09.30.2020 20:10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	09.30.2020 20:10	
o-Terphenyl	84-15-1	101	%	70-135	09.30.2020 20:10	



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LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **FS01**
Lab Sample Id: 674002-005

Matrix: Soil
Date Collected: 09.30.2020 12:45

Date Received: 09.30.2020 15:20
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:15

% Moisture:
Basis: Wet Weight

Seq Number: 3138585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.01.2020 08:30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.01.2020 08:30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.01.2020 08:30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.01.2020 08:30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.01.2020 08:30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.01.2020 08:30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.01.2020 08:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.01.2020 08:30	
4-Bromofluorobenzene	460-00-4	120	%	70-130	10.01.2020 08:30	



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JRU 119 Flowline

Sample Id: **FS02** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-006 Date Collected: 09.30.2020 12:50 Sample Depth: 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8300	200	mg/kg	09.30.2020 21:33		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 16:00 % Moisture:
 Seq Number: 3138526 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	09.30.2020 20:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	112	50.3	mg/kg	09.30.2020 20:30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	09.30.2020 20:30	U	1
Total GRO-DRO	PHC628	112	50.3	mg/kg	09.30.2020 20:30		1
Total TPH	PHC635	112	50.3	mg/kg	09.30.2020 20:30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	09.30.2020 20:30	
o-Terphenyl	84-15-1	84	%	70-135	09.30.2020 20:30	



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JRU 119 Flowline

Sample Id: **FS02**
Lab Sample Id: 674002-006

Matrix: Soil
Date Collected: 09.30.2020 12:50

Date Received: 09.30.2020 15:20
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:40

% Moisture:
Basis: Wet Weight

Seq Number: 3138586

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.01.2020 00:51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.01.2020 00:51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.01.2020 00:51	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.01.2020 00:51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.01.2020 00:51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.01.2020 00:51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.01.2020 00:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.01.2020 00:51	
1,4-Difluorobenzene	540-36-3	96	%	70-130	10.01.2020 00:51	



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JRU 119 Flowline

Sample Id: **FS03** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-007 Date Collected: 09.30.2020 12:55 Sample Depth: 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8370	200	mg/kg	09.30.2020 21:39		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 17:30 % Moisture:
 Seq Number: 3138563 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.01.2020 00:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	104	49.8	mg/kg	10.01.2020 00:12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.01.2020 00:12	U	1
Total GRO-DRO	PHC628	104	49.8	mg/kg	10.01.2020 00:12		1
Total TPH	PHC635	104	49.8	mg/kg	10.01.2020 00:12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	10.01.2020 00:12	
o-Terphenyl	84-15-1	84	%	70-135	10.01.2020 00:12	



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JRU 119 Flowline

Sample Id: **FS03**
Lab Sample Id: 674002-007

Matrix: Soil
Date Collected: 09.30.2020 12:55

Date Received: 09.30.2020 15:20
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:40

% Moisture:
Basis: Wet Weight

Seq Number: 3138586

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.01.2020 01:14	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.01.2020 01:14	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.01.2020 01:14	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.01.2020 01:14	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.01.2020 01:14	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.01.2020 01:14	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.01.2020 01:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.01.2020 01:14	
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.01.2020 01:14	



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JRU 119 Flowline

Sample Id: **FS04** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-008 Date Collected: 09.30.2020 13:00 Sample Depth: 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8150	199	mg/kg	09.30.2020 21:44		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 17:30 % Moisture:
 Seq Number: 3138563 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.01.2020 00:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	116	50.2	mg/kg	10.01.2020 00:32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.01.2020 00:32	U	1
Total GRO-DRO	PHC628	116	50.2	mg/kg	10.01.2020 00:32		1
Total TPH	PHC635	116	50.2	mg/kg	10.01.2020 00:32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.01.2020 00:32	
o-Terphenyl	84-15-1	79	%	70-135	10.01.2020 00:32	



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JRU 119 Flowline

Sample Id: **FS04**
Lab Sample Id: 674002-008

Matrix: Soil
Date Collected: 09.30.2020 13:00

Date Received: 09.30.2020 15:20
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:40

% Moisture:
Basis: Wet Weight

Seq Number: 3138586

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.01.2020 01:36	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.01.2020 01:36	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.01.2020 01:36	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.01.2020 01:36	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.01.2020 01:36	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.01.2020 01:36	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.01.2020 01:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.01.2020 01:36	
1,4-Difluorobenzene	540-36-3	94	%	70-130	10.01.2020 01:36	



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JRU 119 Flowline

Sample Id: **SW05** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-009 Date Collected: 09.30.2020 13:30 Sample Depth: 0 - 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	101	9.92	mg/kg	09.30.2020 21:50		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 17:30 % Moisture:
 Seq Number: 3138563 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.01.2020 00:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.01.2020 00:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.01.2020 00:52	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.01.2020 00:52	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.01.2020 00:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.01.2020 00:52	
o-Terphenyl	84-15-1	96	%	70-135	10.01.2020 00:52	



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JRU 119 Flowline

Sample Id: **SW05**
Lab Sample Id: 674002-009

Matrix: Soil
Date Collected: 09.30.2020 13:30

Date Received: 09.30.2020 15:20
Sample Depth: 0 - 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:40

% Moisture:
Basis: Wet Weight

Seq Number: 3138586

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.01.2020 01:59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.01.2020 01:59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.01.2020 01:59	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.01.2020 01:59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.01.2020 01:59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.01.2020 01:59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.01.2020 01:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.01.2020 01:59	
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.01.2020 01:59	



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JRU 119 Flowline

Sample Id: **SW06** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-010 Date Collected: 09.30.2020 13:35 Sample Depth: 0 - 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	182	9.98	mg/kg	09.30.2020 21:55		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 17:30 % Moisture:
 Seq Number: 3138563 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.01.2020 01:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.01.2020 01:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.01.2020 01:13	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.01.2020 01:13	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.01.2020 01:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.01.2020 01:13	
o-Terphenyl	84-15-1	90	%	70-135	10.01.2020 01:13	



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JRU 119 Flowline

Sample Id: **SW06**
Lab Sample Id: 674002-010

Matrix: Soil
Date Collected: 09.30.2020 13:35

Date Received: 09.30.2020 15:20
Sample Depth: 0 - 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:40

% Moisture:
Basis: Wet Weight

Seq Number: 3138586

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.01.2020 02:21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.01.2020 02:21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.01.2020 02:21	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.01.2020 02:21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.01.2020 02:21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.01.2020 02:21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.01.2020 02:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.01.2020 02:21	
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.01.2020 02:21	



Certificate of Analytical Results 674002

LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW07** Matrix: Soil Date Received: 09.30.2020 15:20
 Lab Sample Id: 674002-011 Date Collected: 09.30.2020 13:40 Sample Depth: 0 - 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 09.30.2020 17:55 % Moisture:
 Seq Number: 3138591 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	339	9.94	mg/kg	09.30.2020 22:01		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 09.30.2020 17:30 % Moisture:
 Seq Number: 3138563 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.01.2020 01:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	54.1	50.0	mg/kg	10.01.2020 01:33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.01.2020 01:33	U	1
Total GRO-DRO	PHC628	54.1	50.0	mg/kg	10.01.2020 01:33		1
Total TPH	PHC635	54.1	50.0	mg/kg	10.01.2020 01:33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.01.2020 01:33	
o-Terphenyl	84-15-1	76	%	70-135	10.01.2020 01:33	



Certificate of Analytical Results 674002

LT Environmental, Inc., Arvada, CO

JRU 119 Flowline

Sample Id: **SW07**
Lab Sample Id: 674002-011

Matrix: Soil
Date Collected: 09.30.2020 13:40

Date Received: 09.30.2020 15:20
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 09.30.2020 17:40

% Moisture:
Basis: Wet Weight

Seq Number: 3138586

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.01.2020 02:43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.01.2020 02:43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.01.2020 02:43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.01.2020 02:43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.01.2020 02:43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.01.2020 02:43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.01.2020 02:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.01.2020 02:43	
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.01.2020 02:43	

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



LT Environmental, Inc.

JRU 119 Flowline

Analytical Method: Chloride by EPA 300

Seq Number: 3138591

MB Sample Id: 7712429-1-BLK

Matrix: Solid

LCS Sample Id: 7712429-1-BKS

Prep Method: E300P

Date Prep: 09.30.2020

LCSD Sample Id: 7712429-1-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	251	100	251	100	90-110	0	20	mg/kg	09.30.2020 20:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3138591

Parent Sample Id: 674002-001

Matrix: Soil

MS Sample Id: 674002-001 S

Prep Method: E300P

Date Prep: 09.30.2020

MSD Sample Id: 674002-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	49.7	199	250	101	251	101	90-110	0	20	mg/kg	09.30.2020 20:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3138591

Parent Sample Id: 674002-011

Matrix: Soil

MS Sample Id: 674002-011 S

Prep Method: E300P

Date Prep: 09.30.2020

MSD Sample Id: 674002-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	339	200	539	100	539	100	90-110	0	20	mg/kg	09.30.2020 22:06	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3138526

MB Sample Id: 7712385-1-BLK

Matrix: Solid

LCS Sample Id: 7712385-1-BKS

Prep Method: SW8015P

Date Prep: 09.30.2020

LCSD Sample Id: 7712385-1-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	1150	115	1170	117	70-135	2	35	mg/kg	09.30.2020 10:10	
Diesel Range Organics (DRO)	<50.0	1000	1300	130	1290	129	70-135	1	35	mg/kg	09.30.2020 10:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		132		133		70-135	%	09.30.2020 10:10
o-Terphenyl	103		129		125		70-135	%	09.30.2020 10:10

Analytical Method: TPH by SW8015 Mod

Seq Number: 3138563

MB Sample Id: 7712411-1-BLK

Matrix: Solid

LCS Sample Id: 7712411-1-BKS

Prep Method: SW8015P

Date Prep: 09.30.2020

LCSD Sample Id: 7712411-1-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	1040	104	1030	103	70-135	1	35	mg/kg	09.30.2020 22:31	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1140	114	70-135	1	35	mg/kg	09.30.2020 22:31	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		125		123		70-135	%	09.30.2020 22:31
o-Terphenyl	107		108		111		70-135	%	09.30.2020 22:31

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

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

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

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



LT Environmental, Inc.

JRU 119 Flowline

Analytical Method: TPH by SW8015 Mod

Seq Number: 3138526

Matrix: Solid

Prep Method: SW8015P

Date Prep: 09.30.2020

MB Sample Id: 7712385-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	09.30.2020 10:50	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3138563

Matrix: Solid

Prep Method: SW8015P

Date Prep: 09.30.2020

MB Sample Id: 7712411-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	09.30.2020 22:10	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3138526

Matrix: Soil

Prep Method: SW8015P

Date Prep: 09.30.2020

Parent Sample Id: 673891-002

MS Sample Id: 673891-002 S

MSD Sample Id: 673891-002 SD

Parameter

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)	<50.2	1000	1270	127	1170	117	70-135	8	35	mg/kg	09.30.2020 15:30	
Diesel Range Organics (DRO)	<50.2	1000	1240	124	1260	126	70-135	2	35	mg/kg	09.30.2020 15:30	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	135		134		70-135	%	09.30.2020 15:30
o-Terphenyl	131		124		70-135	%	09.30.2020 15:30

Analytical Method: TPH by SW8015 Mod

Seq Number: 3138563

Matrix: Soil

Prep Method: SW8015P

Date Prep: 09.30.2020

Parent Sample Id: 674011-001

MS Sample Id: 674011-001 S

MSD Sample Id: 674011-001 SD

Parameter

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)	<49.8	996	840	84	868	87	70-135	3	35	mg/kg	09.30.2020 23:31	
Diesel Range Organics (DRO)	<49.8	996	916	92	910	91	70-135	1	35	mg/kg	09.30.2020 23:31	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		126		70-135	%	09.30.2020 23:31
o-Terphenyl	101		98		70-135	%	09.30.2020 23:31

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

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

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

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



LT Environmental, Inc.
JRU 119 Flowline

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138585

Matrix: Solid

Prep Method: SW5035A

Date Prep: 09.30.2020

MB Sample Id: 7712387-1-BLK

LCS Sample Id: 7712387-1-BKS

LCSD Sample Id: 7712387-1-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	0.0996	100	0.0953	95	70-130	4	35	mg/kg	09.30.2020 23:29	
Toluene	<0.00200	0.100	0.0927	93	0.0879	88	70-130	5	35	mg/kg	09.30.2020 23:29	
Ethylbenzene	<0.00200	0.100	0.0960	96	0.0934	93	71-129	3	35	mg/kg	09.30.2020 23:29	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.187	94	70-135	4	35	mg/kg	09.30.2020 23:29	
o-Xylene	<0.00200	0.100	0.0970	97	0.0943	94	71-133	3	35	mg/kg	09.30.2020 23:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		96		106		70-130	%	09.30.2020 23:29
4-Bromofluorobenzene	118		102		111		70-130	%	09.30.2020 23:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138586

Matrix: Solid

Prep Method: SW5035A

Date Prep: 09.30.2020

MB Sample Id: 7712426-1-BLK

LCS Sample Id: 7712426-1-BKS

LCSD Sample Id: 7712426-1-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	0.101	101	0.103	103	70-130	2	35	mg/kg	09.30.2020 22:59	
Toluene	<0.00200	0.100	0.0984	98	0.0997	100	70-130	1	35	mg/kg	09.30.2020 22:59	
Ethylbenzene	<0.00200	0.100	0.0914	91	0.0927	93	71-129	1	35	mg/kg	09.30.2020 22:59	
m,p-Xylenes	<0.00400	0.200	0.183	92	0.186	93	70-135	2	35	mg/kg	09.30.2020 22:59	
o-Xylene	<0.00200	0.100	0.0917	92	0.0928	93	71-133	1	35	mg/kg	09.30.2020 22:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		98		98		70-130	%	09.30.2020 22:59
4-Bromofluorobenzene	88		85		86		70-130	%	09.30.2020 22:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138585

Matrix: Soil

Prep Method: SW5035A

Date Prep: 09.30.2020

Parent Sample Id: 673902-011

MS Sample Id: 673902-011 S

MSD Sample Id: 673902-011 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	0.111	110	0.0943	93	70-130	16	35	mg/kg	10.01.2020 00:14	
Toluene	<0.00202	0.101	0.105	104	0.0873	86	70-130	18	35	mg/kg	10.01.2020 00:14	
Ethylbenzene	<0.00202	0.101	0.108	107	0.0894	89	71-129	19	35	mg/kg	10.01.2020 00:14	
m,p-Xylenes	<0.00403	0.202	0.220	109	0.180	90	70-135	20	35	mg/kg	10.01.2020 00:14	
o-Xylene	<0.00202	0.101	0.107	106	0.0886	88	71-133	19	35	mg/kg	10.01.2020 00:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	10.01.2020 00:14
4-Bromofluorobenzene	115		115		70-130	%	10.01.2020 00:14

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

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

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

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



LT Environmental, Inc.

JRU 119 Flowline

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138586

Parent Sample Id: 674002-006

Matrix: Soil

MS Sample Id: 674002-006 S

Prep Method: SW5035A

Date Prep: 09.30.2020

MSD Sample Id: 674002-006 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	0.103	103	0.109	109	70-130	6	35	mg/kg	09.30.2020 23:44	
Toluene	<0.00200	0.100	0.0950	95	0.116	116	70-130	20	35	mg/kg	09.30.2020 23:44	
Ethylbenzene	<0.00200	0.100	0.0785	79	0.108	108	71-129	32	35	mg/kg	09.30.2020 23:44	
m,p-Xylenes	<0.00401	0.200	0.157	79	0.205	102	70-135	27	35	mg/kg	09.30.2020 23:44	
o-Xylene	<0.00200	0.100	0.0788	79	0.107	107	71-133	30	35	mg/kg	09.30.2020 23:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		92		70-130	%	09.30.2020 23:44
4-Bromofluorobenzene	91		94		70-130	%	09.30.2020 23:44

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

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

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

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



Chain of Custody

Work Order No: 1634002

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

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 West Mermond
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	enaka@ltenv.com, dmoir@ltenv.com

Project Name:	JRU 119 Flowline	Turn Around	
Project Number:	01292015	Routine	X
P.O. Number:	Eddy County	Rush:	
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	1.84/1.2	Thermometer ID				
Received Inact:	(Yes) No	Correction Factor:		-0.2		
Cooler Custody Seals:	Yes	No	N/A	Total Containers:		
Sample Custody Seals:	Yes	No	N/A	11		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST										Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)							
SW01	S	09/26/20	12:05	0'-8"	1	X	X	X							
SW02			12:10	0'-7"											
SW03			12:15	0'-7"											
SW04			12:20	0'-7"											
FS01			12:45	8'											
FS02			12:50	7'											
FS03			12:55	7'											
FS04			13:00	7'											
SW05			13:30	0'-7"											
SW06			13:35	0'-7"											

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 Ti 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 Ti 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
<i>[Signature]</i>	<i>[Signature]</i>	9:30:30 1520			



Chain of Custody

Work Order No: 624002

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

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Project Manager:	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:	522 West Mermond
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	jenaka@ltenv.com, dmoir@ltenv.com

Program: UST/PST	<input type="checkbox"/> RP	<input type="checkbox"/> Crowfields	<input type="checkbox"/> RC	<input type="checkbox"/> Spertund
State of Project:				
Reporting Level II	<input type="checkbox"/> Level III	<input type="checkbox"/> ST/UST	<input type="checkbox"/> RP	<input type="checkbox"/> Level IV
Deliverables: EDD	<input type="checkbox"/> ADAPT	<input type="checkbox"/> Other:		

Project Name:	36v 119 Flowline	Turn Around	
Project Number:	01292015	Routine	<input checked="" type="checkbox"/>
P.O. Number:	Eddy County	Rush:	
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	19/1.2	Thermometer ID				
Received Inlet:	Yes	No	T-NM-007			
Cooler Custody Seals:	Yes	No	Correction Factor: -0.2			
Sample Custody Seals:	Yes	No	Total Containers: 11			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
SW07	S	09/30/20	1340	0-8'

Number of Containers
TPH (EPA 8015)
BTEX (EPA 0-8021)
Chloride (EPA 300.0)

ANALYSIS REQUEST	Work Order Notes
	TAT starts the day received by the lab, if received by 4:30pm
	Sample Comments
	complete

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 Ti 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 Ti 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
Elizabeth Naka	Che C. Hara	9-30-20 1520			

Certificate of Analysis Summary 675418



LT Environmental, Inc., Arvada, CO

Project Name: JRU 119

Project Id: 012920115

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Fri 10.16.2020 14:00

Report Date: 10.19.2020 14:05

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	675418-001	675418-002				
	Field Id:	SW04	SW04				
	Depth:	0-4 ft	4-7 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	10.16.2020 12:55	10.16.2020 13:00				
BTEX by EPA 8021B	Extracted:	10.16.2020 15:08	10.16.2020 15:08				
	Analyzed:	10.16.2020 17:41	10.16.2020 18:04				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00201 0.00201	<0.00200 0.00200				
Toluene		<0.00201 0.00201	<0.00200 0.00200				
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200				
m,p-Xylenes		<0.00402 0.00402	<0.00401 0.00401				
o-Xylene		<0.00201 0.00201	<0.00200 0.00200				
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200				
Total BTEX		<0.00201 0.00201	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	10.16.2020 15:59	10.16.2020 15:59				
	Analyzed:	10.17.2020 00:18	10.17.2020 00:24				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		12.0 10.1	15000 198				
TPH by SW8015 Mod	Extracted:	10.16.2020 16:00	10.16.2020 16:00				
	Analyzed:	10.16.2020 16:21	10.16.2020 17:03				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.3 50.3				
Diesel Range Organics (DRO)		<50.3 50.3	159 50.3				
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.3 50.3				
Total GRO-DRO		<50.3 50.3	159 50.3				
Total TPH		<50.3 50.3	159 50.3				

BRL - Below Reporting Limit

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



Analytical Report 675418

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 119

012920115

10.19.2020

Collected By: Client

**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



10.19.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **675418**

JRU 119

Project Address: Eddy County

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 Eurofins Xenco, LLC Report Number(s) 675418. 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 Eurofins Xenco, LLC. 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. 675418 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "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 675418

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW04	S	10.16.2020 12:55	0 - 4 ft	675418-001
SW04	S	10.16.2020 13:00	4 - 7 ft	675418-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 119

Project ID: 012920115
Work Order Number(s): 675418

Report Date: 10.19.2020
Date Received: 10.16.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 675418

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SW04** Matrix: Soil Date Received: 10.16.2020 14:00
 Lab Sample Id: 675418-001 Date Collected: 10.16.2020 12:55 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.16.2020 15:59 % Moisture:
 Seq Number: 3139971 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.0	10.1	mg/kg	10.17.2020 00:18		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 10.16.2020 16:00 % Moisture:
 Seq Number: 3139881 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.16.2020 16:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.16.2020 16:21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.16.2020 16:21	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.16.2020 16:21	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.16.2020 16:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	10.16.2020 16:21	
o-Terphenyl	84-15-1	75	%	70-135	10.16.2020 16:21	



Certificate of Analytical Results 675418

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SW04**
Lab Sample Id: 675418-001

Matrix: Soil
Date Collected: 10.16.2020 12:55

Date Received: 10.16.2020 14:00
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.16.2020 15:08

% Moisture:
Basis: Wet Weight

Seq Number: 3139968

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.16.2020 17:41	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.16.2020 17:41	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.16.2020 17:41	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.16.2020 17:41	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.16.2020 17:41	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.16.2020 17:41	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.16.2020 17:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.16.2020 17:41	
4-Bromofluorobenzene	460-00-4	110	%	70-130	10.16.2020 17:41	



Certificate of Analytical Results 675418

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SW04** Matrix: Soil Date Received: 10.16.2020 14:00
 Lab Sample Id: 675418-002 Date Collected: 10.16.2020 13:00 Sample Depth: 4 - 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.16.2020 15:59 % Moisture:
 Seq Number: 3139971 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15000	198	mg/kg	10.17.2020 00:24		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 10.16.2020 16:00 % Moisture:
 Seq Number: 3139881 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.16.2020 17:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	159	50.3	mg/kg	10.16.2020 17:03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.16.2020 17:03	U	1
Total GRO-DRO	PHC628	159	50.3	mg/kg	10.16.2020 17:03		1
Total TPH	PHC635	159	50.3	mg/kg	10.16.2020 17:03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	10.16.2020 17:03	
o-Terphenyl	84-15-1	86	%	70-135	10.16.2020 17:03	



Certificate of Analytical Results 675418

LT Environmental, Inc., Arvada, CO

JRU 119

Sample Id: **SW04**
Lab Sample Id: 675418-002

Matrix: Soil
Date Collected: 10.16.2020 13:00

Date Received: 10.16.2020 14:00
Sample Depth: 4 - 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.16.2020 15:08

% Moisture:
Basis: Wet Weight

Seq Number: 3139968

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.16.2020 18:04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.16.2020 18:04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.16.2020 18:04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.16.2020 18:04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.16.2020 18:04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.16.2020 18:04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.16.2020 18:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.16.2020 18:04	
4-Bromofluorobenzene	460-00-4	113	%	70-130	10.16.2020 18:04	

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



LT Environmental, Inc.

JRU 119

Analytical Method: Chloride by EPA 300

Seq Number: 3139971

MB Sample Id: 7713424-1-BLK

Matrix: Solid

LCS Sample Id: 7713424-1-BKS

Prep Method: E300P

Date Prep: 10.16.2020

LCSD Sample Id: 7713424-1-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	255	102	259	104	90-110	2	20	mg/kg	10.16.2020 20:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3139971

Parent Sample Id: 675356-001

Matrix: Soil

MS Sample Id: 675356-001 S

Prep Method: E300P

Date Prep: 10.16.2020

MSD Sample Id: 675356-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	686	199	899	107	894	105	90-110	1	20	mg/kg	10.16.2020 21:46	

Analytical Method: Chloride by EPA 300

Seq Number: 3139971

Parent Sample Id: 675356-011

Matrix: Soil

MS Sample Id: 675356-011 S

Prep Method: E300P

Date Prep: 10.16.2020

MSD Sample Id: 675356-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	95.8	199	307	106	308	106	90-110	0	20	mg/kg	10.16.2020 23:18	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3139881

MB Sample Id: 7713398-1-BLK

Matrix: Solid

LCS Sample Id: 7713398-1-BKS

Prep Method: SW8015P

Date Prep: 10.16.2020

LCSD Sample Id: 7713398-1-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	750	75	859	86	70-135	14	35	mg/kg	10.16.2020 10:10	
Diesel Range Organics (DRO)	<50.0	1000	891	89	1020	102	70-135	14	35	mg/kg	10.16.2020 10:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		99		112		70-135	%	10.16.2020 10:10
o-Terphenyl	87		87		99		70-135	%	10.16.2020 10:10

Analytical Method: TPH by SW8015 Mod

Seq Number: 3139881

Matrix: Solid

MB Sample Id: 7713398-1-BLK

Prep Method: SW8015P

Date Prep: 10.16.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.16.2020 09:50	

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

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

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

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



LT Environmental, Inc.

JRU 119

Analytical Method: TPH by SW8015 Mod

Seq Number: 3139881

Parent Sample Id: 675349-004

Matrix: Soil

MS Sample Id: 675349-004 S

Prep Method: SW8015P

Date Prep: 10.16.2020

MSD Sample Id: 675349-004 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)	<50.2	1000	853	85	882	88	70-135	3	35	mg/kg	10.16.2020 11:15	
Diesel Range Organics (DRO)	<50.2	1000	1030	103	1060	106	70-135	3	35	mg/kg	10.16.2020 11:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		112		70-135	%	10.16.2020 11:15
o-Terphenyl	100		98		70-135	%	10.16.2020 11:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3139968

MB Sample Id: 7713419-1-BLK

Matrix: Solid

LCS Sample Id: 7713419-1-BKS

Prep Method: SW5035A

Date Prep: 10.16.2020

LCSD Sample Id: 7713419-1-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	0.101	101	0.103	103	70-130	2	35	mg/kg	10.16.2020 13:44	
Toluene	<0.00200	0.100	0.0959	96	0.0979	98	70-130	2	35	mg/kg	10.16.2020 13:44	
Ethylbenzene	<0.00200	0.100	0.0998	100	0.104	104	71-129	4	35	mg/kg	10.16.2020 13:44	
m,p-Xylenes	<0.00400	0.200	0.204	102	0.211	106	70-135	3	35	mg/kg	10.16.2020 13:44	
o-Xylene	<0.00200	0.100	0.0984	98	0.101	101	71-133	3	35	mg/kg	10.16.2020 13:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		102		102		70-130	%	10.16.2020 13:44
4-Bromofluorobenzene	116		113		113		70-130	%	10.16.2020 13:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3139968

Parent Sample Id: 675356-001

Matrix: Soil

MS Sample Id: 675356-001 S

Prep Method: SW5035A

Date Prep: 10.16.2020

MSD Sample Id: 675356-001 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	0.0998	0.108	108	0.113	113	70-130	5	35	mg/kg	10.16.2020 14:29	
Toluene	<0.00200	0.0998	0.0998	100	0.106	106	70-130	6	35	mg/kg	10.16.2020 14:29	
Ethylbenzene	<0.00200	0.0998	0.106	106	0.112	112	71-129	6	35	mg/kg	10.16.2020 14:29	
m,p-Xylenes	<0.00399	0.200	0.214	107	0.230	116	70-135	7	35	mg/kg	10.16.2020 14:29	
o-Xylene	<0.00200	0.0998	0.106	106	0.112	112	71-133	6	35	mg/kg	10.16.2020 14:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		105		70-130	%	10.16.2020 14:29
4-Bromofluorobenzene	108		110		70-130	%	10.16.2020 14:29

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

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

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

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



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
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 233-7550
Hobbs, NM (575-392-7550)

Chain of Custody

Work Order No: 675418

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:	522 West Mermond
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	enaka@ltenv.com , dmoir@ltenv.com

Work Order Comments									
Program: UST/PST		<input type="checkbox"/> RP	<input type="checkbox"/> Growfields	<input type="checkbox"/> RC	<input type="checkbox"/> S_perfund				
State of Project:									
Reporting Level II		<input type="checkbox"/> Level III	<input type="checkbox"/> ST/UST	<input type="checkbox"/> RP	<input type="checkbox"/> Level IV				
Deliverables: EDD		<input type="checkbox"/>	ADAPT	<input type="checkbox"/>	Other:				

[illegible]

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

Action 10601

OCD Reviewer	Condition
ceads	None