



LT Environmental, Inc.

3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

May 6, 2020

Mr. Bradford Billings
New Mexico Oil Conservation Division
1220 South St. Francis Drive, #3
Santa Fe, New Mexico 87505

**RE: Closure Request
XTO Energy, Inc.
Remuda Basin State #2
Remediation Permit Number 2RP-4585
Eddy County, New Mexico**

Dear Mr. Billings:

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 Remuda Basin State #2 (Site) in Unit K, Section 19, Township 23 South, Range 30 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 an illegal dumping of oil, cement, and water at the Site.

The release is included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the New Mexico Oil Conservation Division (NMOCD) effective November 13, 2018. The purpose of the Compliance Agreement is to ensure reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The release is categorized as a Tier IV site in the Compliance Agreement, meaning the release occurred prior to August 14, 2018, the effective date of 19.15.29 NMAC; however, remediation was ongoing.

RELEASE BACKGROUND

On January 9, 2018, a lease operator arrived onsite to find multiple areas where fluids had been dumped on the Site from an unknown source. New Mexico State Police were contacted, and a case number was issued. The dumped areas affected the well pad, pasture, and reserve pit. The stained areas of the well pad were dragged. Approximately 10 barrels (bbls) of oil, cement, and water were released. XTO reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 on January 22, 2018 and was assigned Remediation Permit (RP) Number 2RP-4585 (Attachment 1). Based on the site assessment activities and results of the soil sampling events, XTO is requesting no further action for this release.



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 NMAC. Depth to groundwater at the Site is estimated to be between 50 and 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 321742103552601, located approximately 2,314 feet north of the Site. The water well has a depth to groundwater of approximately 66.1 feet bgs and a total depth of 100 feet. Ground surface elevation at the water well location is 3,040 feet above mean sea level (AMSL), which is approximately 10 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an intermittent stream approximately 2,100 feet south east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located within a high-potential karst area, as identified on the Bureau of Land Management (BLM)-provided overlay.

On February 21, 2020, LTE contracted Southwest Geophysical Consulting, LLC (SGC) to determine the location, description, and boundaries of any karst-related features within a 200-meter boundary surrounding the Site. The survey concluded that no surface karst features were located within the survey area and that the Site can be classified as a medium-potential karst area. The Cave and Karst Resource Inventory Report is included as Attachment 2.

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): 2,500 mg/kg;
- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- Chloride: 10,000 mg/kg.

A closure criteria of 600 mg/kg chloride was applied to the top 4 feet the pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top 4 feet of areas that will be reclaimed following remediation.



SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

Between October 2019 and March 2020, LTE personnel were at the Site to oversee site assessment and excavation activities.

LTE personnel inspected the Site to evaluate the release extent; no visible indications of the illegal dumping were identified. Due to the absence of visible indications of the historical release areas, potholes and boreholes were advanced via backhoe at 18 locations around the well pad and adjacent pasture to assess for potential soil impacts. Potholes PH01 through PH15 were advanced to depths ranging from 3 feet to 9 feet bgs. Delineation soil samples were collected from each pothole from depths ranging from 1 foot to 9 feet bgs. Boreholes BH01 through BH03 were advanced on the pad over the former reserve pit area. Delineation soil samples were collected from each borehole from depths of 0.5 feet and 1-foot bgs. Further vertical assessment was not completed in this area so as not to compromise the integrity of the reserve pit. Soil from the potholes and boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each pothole and borehole were logged on lithologic/soil sampling logs, which are included in Attachment 3. The delineation soil sample locations are depicted on Figure 2.

Impacted soil was excavated from six separate excavation areas, as indicated by field screening activities and laboratory analytical results for the delineation 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. Impacted soil was excavated to depths ranging from 4 feet to 6 feet bgs. Following removal of impacted soil, LTE collected five-point composite soil samples every 200 square feet from the sidewalls and floors of the excavations. The five-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples were collected from the sidewalls of the excavations at depths ranging from the ground surface to 6 feet bgs. Composite soil samples were collected from the floors of the excavations at depths ranging from 1 foot to 6 feet bgs. The excavation extents and excavation soil sample locations are depicted on Figure 3.

The delineation and excavation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO)



following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. The soil sample locations are depicted on Figure 2.

The combined excavations measured approximately 1,470 square feet in area with a depth of 4 feet to 6 feet bgs. A total of approximately 287 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported and properly disposed of at the R360 Landfill located in Hobbs, New Mexico. Photographic documentation was conducted during the Site visits. Photographs are included in Attachment 4.

ANALYTICAL RESULTS

Laboratory analytical results for the delineation soil samples collected from potholes PH01, PH02, PH04, PH05, PH11 through PH15 and boreholes BH01 through BH03 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and no excavation was required in these areas.

Laboratory analytical results indicated that chloride concentrations exceeded 600 mg/kg above 4 feet within the pasture in delineation soil samples collected from potholes PH03, PH06, PH07, PH08, PH09, and PH10. Based on laboratory analytical results for the delineation soil samples, excavation of impacted soil was conducted in these areas.

Laboratory analytical results for the excavation sidewall and floor samples, collected from the final excavation extents, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and chloride concentrations were below 600 mg/kg in samples collected in the pasture from the top four feet of the subsurface.

The laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 5.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the January 9, 2018, illegal dumping release. Delineation soil sampling was completed on the well pad and adjacent pasture to assess the lateral and vertical extent of impacted soil. Based on the laboratory analytical results for the delineation soil samples, impacted soil was excavated. Laboratory analytical results for the excavation soil samples, collected from the final excavation extents, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, chloride concentrations were below 600 mg/kg in excavation soil samples collected in the pasture from the top four feet of the subsurface. Based on the excavation and delineation soil sample analytical results, no further remediation was required.



Billings, B.
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Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Number 2RP-4585. XTO will backfill the excavations with material purchased locally and recontoured the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included in Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads 'Korey Kennedy'.

Korey Kennedy
Project Environmental Scientist

A handwritten signature in black ink that reads 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Senior Geologist

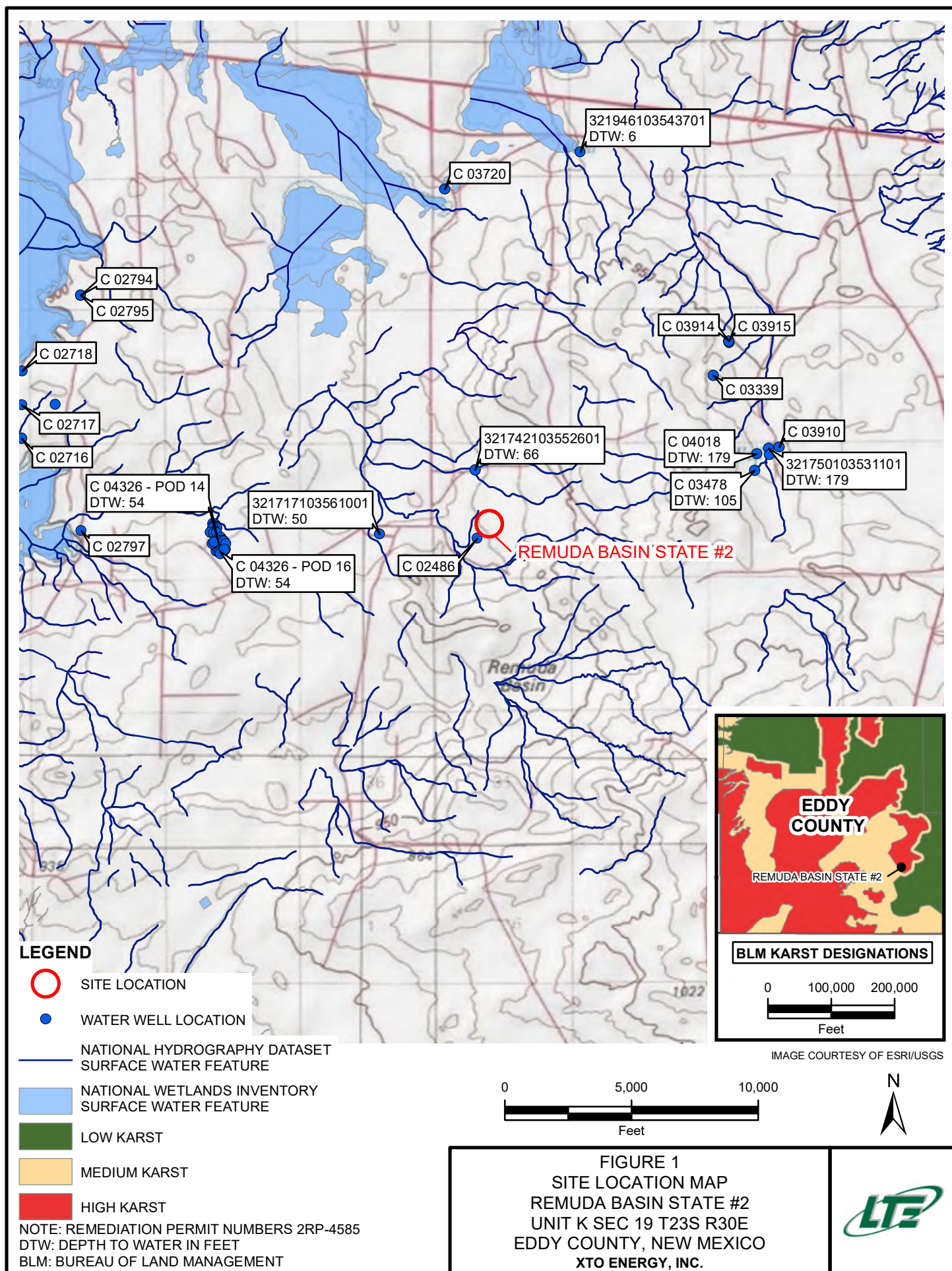
cc: Kyle Littrell, XTO
Mike Bratcher, NMOCD
Ryan Mann, State Land Office

Attachments:

Figure 1 Site Location Map
Figure 2 Delineation Soil Sample Locations
Figure 3 Excavation Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-4585)
Attachment 2 Cave and Karst Resource Inventory Report
Attachment 3 Lithologic / Soil Sample Logs
Attachment 4 Photographic Log
Attachment 5 Laboratory Analytical Reports

FIGURES





**LEGEND**

- DELINEATION SOIL SAMPLE WITH CONCENTRATIONS PREVIOUSLY EXCEEDING APPLICABLE CLOSURE CRITERIA
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

— ELECTRIC LINE

— GAS LINE

 HISTORICAL RESERVE PIT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBERS 2RP-4585

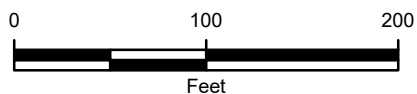
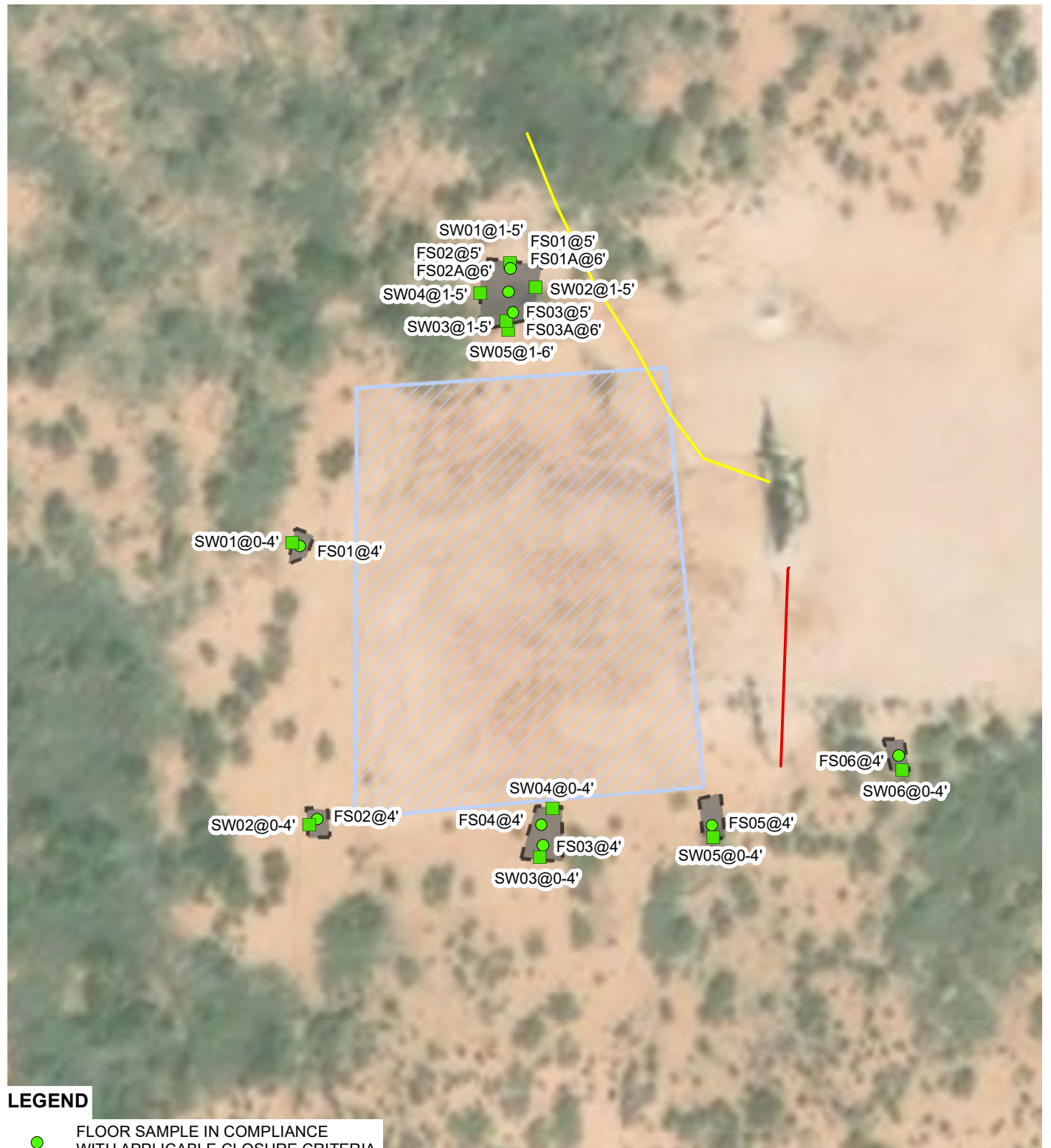


IMAGE COURTESY OF ESRI



FIGURE 2
DELINEATION SOIL SAMPLE LOCATIONS
REMUDA BASIN STATE #2
UNIT K SEC 19 T23S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



**LEGEND**

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

— ELECTRIC LINE

— GAS LINE

EXCAVATION EXTENT

HISTORICAL RESERVE PIT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBERS 2RP-4585

IMAGE COURTESY OF ESRI

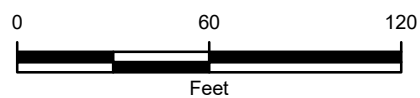


FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
REMUDA BASIN STATE #2
UNIT K SEC 19 T23S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA BASIN STATE #2
REMEDATION PERMIT NUMBER # 2RP-4585
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	10,000
PH01	1	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	778
PH01A	2	10/29/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.1	<50.1	<50.1	<50.1	<50.1	958
PH01B	3	10/29/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.3	<50.3	<50.3	<50.3	<50.3	1,110
PH01C	4	10/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.9	<49.9	<49.9	<49.9	<49.9	852
PH02	1	10/29/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.0	<50.0	<50.0	<50.0	<50.0	<9.98
PH02A	2	10/29/2019	<0.000998	<0.000998	<0.000998	0.00512	0.00512	<50.1	<50.1	<50.1	<50.1	<50.1	71.8
PH02B	3	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	881
PH02C	4	10/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0	1,500
PH02D	5	10/29/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<49.9	<49.9	<49.9	<49.9	<49.9	841
PH02E	6	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	<50.0	<50.0	<50.0	<50.0	511
PH03	1	10/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	412	80.6	412	493*	709*
PH03A	2	10/29/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<50.0	1350	253	1,350	1,600*	417*
PH03B	3	10/29/2019	<0.000990	0.00348	0.00117	<0.000990	0.00465	<50.1	230	<50.1	230	230*	299*
PH03C	4	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.8	68.7	<49.8	68.7	68.7	582
PH03D	5	10/29/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<50.0	<50.0	<50.0	<50.0	<50.0	581
PH03E	6	10/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	462
PH04	1	10/29/2019	<0.000998	<0.000998	0.00342	0.00293	0.00635	<50.1	162	<50.1	162	162*	<9.98*
PH04A	2	10/29/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.3	137	<50.3	137	137*	<10.1*
PH04B	3	10/29/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.2	55.2	<50.2	55.2	55.2*	<10.1*
PH04C	4	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	<9.98
PH05	1	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	<50.0	<50.0	<50.0	<50.0*	<9.96*
PH05A	2	10/29/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.3	<50.3	<50.3	<50.3	<50.3*	<10.1*
PH05B	3	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1*	112*
PH05C	4	10/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	42.9
PH05D	5	10/29/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.0	<50.0	<50.0	<50.0	<50.0	50.1

**TABLE 1
SOIL ANALYTICAL RESULTS**

**REMUDA BASIN STATE #2
REMEDATION PERMIT NUMBER # 2RP-4585
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	10,000
PH06	1	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3*	82.8*
PH06A	2	10/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1*	837*
PH06B	3	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.9	<49.9	<49.9	<49.9	<49.9*	753*
PH06C	4	10/29/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<50.3	<50.3	<50.3	<50.3	<50.3	1,570
PH06D	5	10/29/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.1	<50.1	<50.1	<50.1	<50.1	2,600
PH06E	6	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	1,650
PH06F	7	10/29/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.3	<50.3	<50.3	<50.3	<50.3	958
PH06G	8	10/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	758
PH06H	9	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	968
PH07	1	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3*	1,600*
PH07A	2	10/29/2019	<0.00101	<0.00101	0.00258	0.00225	0.00483	<50.2	<50.2	<50.2	<50.2	<50.2*	1,130*
PH07B	3	10/29/2019	<0.000992	0.00408	0.00129	0.00236	0.00773	<49.9	<49.9	<49.9	<49.9	<49.9*	236*
PH07C	4	10/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	<50.0	<50.0	<50.0	<50.0	730
PH07D	5	10/29/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.1	<50.1	<50.1	<50.1	<50.1	214
PH07E	6	10/29/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.2	<50.2	<50.2	<50.2	<50.2	51.7
PH08	1	10/30/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.3	<50.3	<50.3	<50.3	<50.3*	1,330*
PH08A	2	10/30/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0*	551*
PH08B	3	10/30/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.2	<50.2	<50.2	<50.2	<50.2*	498*
PH08C	4	10/30/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<49.8	<49.8	<49.8	<49.8	<49.8	78.3
PH08D	5	10/30/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0	36.2
PH08E	6	10/30/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	352
PH09	1	10/30/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<50.1	<50.1	<50.1	<50.1	<50.1*	1,070*
PH09A	2	10/30/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.2	<50.2	<50.2	<50.2	<50.2*	569*
PH09B	3	10/30/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.2	<50.2	<50.2	<50.2	<50.2*	716*
PH10	1	10/30/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.2	<50.2	<50.2	<50.2	<50.2*	2,220*

TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA BASIN STATE #2
REMEDATION PERMIT NUMBER # 2RP-4585
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)
NMOCDC Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
PH10A	2	10/30/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2*	1,170*
PH10B	3	10/30/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.2	<50.2	<50.2	<50.2	<50.2*	705*
PH10C	4	10/30/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	<497
PH11	1	10/30/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	<50.0	<50.0	<50.0	<50.0	7,490
PH11A	2	10/30/2019	<0.000988	<0.000988	<0.000988	<0.000988	<0.000988	<50.1	<50.1	<50.1	<50.1	<50.1	1,360
PH11B	3	10/30/2019	<0.000988	<0.000988	<0.000988	<0.000988	<0.000988	<50.0	<50.0	<50.0	<50.0	<50.0	<498
PH12	1	11/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	1,800
PH12A	2	11/04/2019	<0.0000199	<0.0000199	<0.0000199	<0.0000199	<0.0000199	<49.8	<49.8	<49.8	<49.8	<49.8	2,370
PH12B	3	11/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	2,250
PH12C	4	11/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	1,170
PH12D	5	11/04/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	1,650
PH13	1	11/04/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	1,350
PH13A	2	11/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	1,610
PH13B	3	11/04/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	1,570
PH14	1	11/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	5,880
PH14A	2	11/04/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	4,470
PH14B	3	11/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	3,990
PH14C	4	11/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	1,930
PH15	7	12/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	1,060
PH15A	8	12/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	406
BH01	0.5	03/17/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	6,180
BH01A	1	03/17/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.3	<50.3	<50.3	<50.3	<50.3	3,580
BH02	0.5	03/17/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	4,740
BH02A	1	03/17/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	4,300
BH03	0.5	03/17/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	6,640

**TABLE 1
SOIL ANALYTICAL RESULTS**

**REMUDA BASIN STATE #2
REMEDATION PERMIT NUMBER # 2RP-4585
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	10,000
BH03A	1	03/17/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	6,630
NORTHERN EXCAVATION													
SW01	1-5	11/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8*	355*
SW02	1-5	11/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0*	296*
SW03	1-5	11/04/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9*	790*
SW04	1-5	11/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0*	476*
SW05	1-6	12/04/2019	<0.00196	<0.00196	<0.00196	<0.00196	<0.00196	<50.0	<50.0	<50.0	<50.0	<50.0	1,340
FS01	5	11/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	916
FS01A	6	12/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	241
FS02	5	11/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	724
FS02A	6	12/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	829
FS03	5	11/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	723
FS03A	6	12/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	1,540
WESTERN EXCAVATION													
FS01	4	03/12/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	882
SW01	0 - 4	03/12/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0*	198*
SOUTHWEST EXCAVATION													
FS02	4	03/12/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	593
SW02	0 - 4	03/12/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0*	442*
SOUTHERN EXCAVATION													
FS03	4	03/12/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	54.8	<49.9	54.8	54.8	1,380
FS04	4	03/13/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	794
SW03	0 - 4	03/13/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8*	147*
SW04	0 - 4	03/13/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3*	209*

TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA BASIN STATE #2
REMEDATION PERMIT NUMBER # 2RP-4585
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	10,000
SOUTHEAST EXCAVATION													
FS05	4	03/13/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	662
SW05	0 - 4	03/13/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9*	467*
EASTERN EXCAVATION													
FS06	4	03/13/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	2,250
SW06	0 - 4	03/13/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2*	120*

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 represented by sample that was removed

* - indicates sample was collected in the top 4 feet of an area to be reclaimed after remediation
closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg

NM OIL CONSERVATION

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

ARTESIA DISTRICT

JAN 22 2018

RECEIVED

State of New Mexico

NM OIL CONSERVATION

ARTESIA DISTRICT

Energy Minerals and Natural Resources

Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

JAN 22 2018

RECEIVED

Form C-141

Revised April 3, 2017

Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB1802427813

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: XTO Energy 5380	Contact: Kyle Littrell
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No: 432-221-7331
Facility Name: Remuda Basin State #2	Facility Type: Exploration and Production

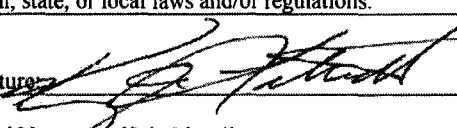
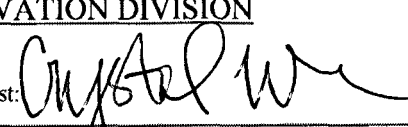
Surface Owner: State of NM	Mineral Owner: State of NM	API No: 30-015-28400
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LOCATION OF RELEASE

Unit Letter K	Section 19	Township 23S	Range 30E	Feet from the 2075	North/South Line South	Feet from the 1960	East/West Line West	County Eddy
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Latitude 32.288820° Longitude -103.923228° NAD83

NATURE OF RELEASE

Type of Release Illegal Dumping - Oil, Cement, Water	Volume of Release 10 bbls	Volume Recovered 0 bbls
Source of Release Unknown	Date and Hour of Occurrence 1/9/2018 time unknown	Date and Hour of Discovery 1/9/2018 1:30 pm
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour: N/A	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* Lease operator arrived onsite to find multiple areas of fluids dumped on location from an unknown source. New Mexico State Police were contacted and a site visit was performed and case #NMSPR1800615 was issued.		
Describe Area Affected and Cleanup Action Taken.* The dumped areas affected the well pad, pasture and reserve pit to the northwest and southwest of the well pad. The stained area of the well pad was back-dragged and an environmental contractor was retained to assist with remediation efforts.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.		
Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Kyle Littrell	Approved by Environmental Specialist: 	
Title: Environmental Coordinator	Approval Date: 1/25/18	Expiration Date: N/A
E-mail Address: Kyle.Littrell@xtocenergy.com	Conditions of Approval: see attached	Attached: 
Date: 1/22/2018	Phone: 432-221-7331	

* Attach Additional Sheets If Necessary

1/25/18 AB

Operator/Responsible Party,

The OCD has received the form C-141 you provided on **1/22/18** regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number ARP-4585 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District II office in Artesia on or before 2/22/18. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

jim.griswold@state.nm.us

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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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	
District RP	2RP-4585
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-4585
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.288820 Longitude -103.923228
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Remuda Basin State #2	Site Type Exploration and Production
Date Release Discovered January 9, 2018, 1:30 P.M.	API# (if applicable) 30-015-28400

Unit Letter	Section	Township	Range	County
K	19	23S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe) Oil, Cement, Water mix	Volume/Weight Released (provide units) 10 bbls	Volume/Weight Recovered (provide units) 0.0 bbls

Cause of Release

A lease operator arrived onsite to find multiple areas of fluids dumped on location from an unknown source. New Mexico State Police were contacted, and a case was issued. The dumped areas affected the well pad, pasture, and reserve pit. The stained area of the well pad was dragged.

Incident ID	
District RP	2RP-4585
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD?	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: <u>Kyle Littrell</u> Title: <u>SH&E Supervisor</u>
Signature: _____ Date: <u>5-4-2020</u>
email: <u>Kyle.Littrell@xtoenergy.com</u> Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by: _____ Date: _____

Incident ID	
District RP	2RP-4585
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-4585
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E SupervisorSignature: _____ Date: 05/04/2020email: Kyle Littrell@xtoenergy.com Telephone: (432)-221-7331**OCD Only**

Received by: _____ Date: _____

Incident ID	
District RP	2RP-4585
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: _____ Date: 5-4-2020

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

OCD Only

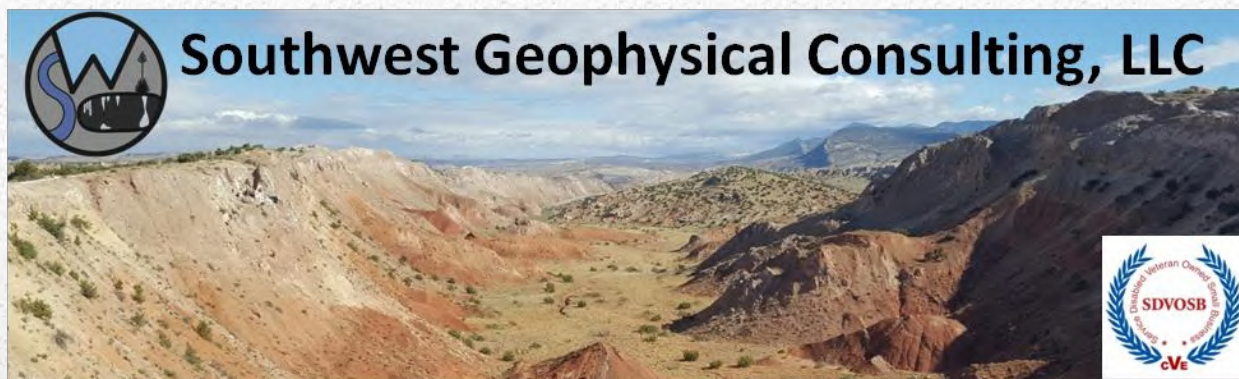
Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

ATTACHMENT 2: CAVE AND KARST RESOURCE INVENTORY REPORT



Cave and Karst Resource Inventory Report Remuda Basin #002 Eddy County, New Mexico

**Prepared for:
LT Environmental, Inc.
3300 North A Street Building 1, Unit 222
Midland, TX 79705**

☐ **Positive – HKOZ remediation process required**

☒ **Negative – MKOZ remediation process may be
approved by the Oil Conservation Division**

March 09, 2020

LTE-008-20200220

Published by:

Southwest Geophysical Consulting, LLC
5117 Fairfax Dr. NW
Albuquerque, NM 87114
(505) 585-2550
www.swgeophys.com

Prepared by:

David D. Decker, Ph.D.
Principal, Chief Executive Officer
dave@swgeophys.com

Prepared for:

LT Environmental, Inc.
3300 North A Street Building 1, Unit 222
Midland, TX 79705

Point of Contact:

Korey Kennedy
(970) 285-9985
kkennedy@ltenv.com

MMXX

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1.0 INTRODUCTION

This report was commissioned by LT Environmental, Inc. (hereinafter referred to as "the client") on February 20, 2020 for the purpose of determining what, if any, karst-related surface features are present near the Remuda Basin #002 pad (hereinafter termed "Remuda", **Figure 1**) and to provide guidance on the level of remediation required. This study does not include subsurface features, which would require a geophysical survey. The study area that this report covers is in a **HIGH** karst occurrence zone and entirely located within New Mexico State Land Office managed lands (**Figure 2**).

As indicated in section **1.3 Affected Environment**, the bedrock and overlying soil at the survey site are susceptible to sinkhole development and karst features may be hidden beneath the existing soil stratum. Risk associated with sinkhole formation can be minimized during remediation by careful excavation of the spill site and the control of site hydrology. The Owner/Developer must recognize that a risk of sinkhole-induced damage to infrastructure remains even after site remediation. The Owner/Developer must evaluate the risks and attendant costs of performing a geophysical survey prior to remediation, versus no geophysical survey, and must be willing to accept these risks if it is decided that a surface karst survey is sufficient. Southwest Geophysical Consulting, LLC can provide a geophysical survey. If the decision is made to conduct a geophysical survey, a cost estimate and timeline will be provided upon request.

1.1 Goals of this Study

To provide the client with the location, description, photos, and boundaries of any surface karst-related features within a 200-meter boundary surrounding the pad on the Remuda project site as provided by the client via e-mail on February 20, 2020.

1.2 Summary of Findings

No surface karst features were located within the pedestrian survey area. However, unknown hidden features may still exist beneath the surface. Caution should be exercised during any remediation efforts.



Figure 1: Karst occurrence overview. Red transparent area is a high karst occurrence zone; blue transparent area is a medium karst occurrence zone. Study area is the red outlined area in the lower-right portion of the image. Background image credit: Google Earth. Image date: November 02, 2017. Datum: WGS-84.

1.3 Affected Environment

The Remuda project site is located in evaporite karst terrain, a landform that is characterized by underground drainage through solutionally enlarged conduits. Evaporite karst terrain may contain sinkholes, sinking streams, caves, and springs. Sinkholes leading to underground drainages and voids are common. These karst features, as well as occasional fissures and discontinuities in the bedrock, provide the primary sources for rapid recharge of the groundwater aquifers of the region.

The Bureau of Land Management (BLM) categorizes all areas within the Carlsbad Field Office (CFO) zone of responsibility as having either low, medium, or high cave potential based on geology, occurrence of known caves, density of karst features, and potential impacts to freshwater aquifers. The New Mexico State Land office also recognizes these categories. This project occurs within a **HIGH** karst occurrence zone^[1] (HKOZ, **Figure 1**). A high karst occurrence zone is defined as areas in known soluble rock types that contain a high frequency of significant caves and karst features such as sinkholes, bedrock fractures that provide rapid recharge of karst aquifers, and springs that provide riparian habitat^[2].

An on-site inspection revealed that there are no surface karst features within the pedestrian survey area. However, unknown buried features may exist; therefore, this action is subject to mitigation measures designed to adequately protect known and potential cave/karst resources.

2.0 LOCATION AND DESCRIPTION OF STUDY AREA

2.1 Description of Site

The Remuda project site is located in Eddy County, New Mexico, 31 kilometers (19 miles) southeast of Carlsbad, New Mexico; 6 kilometers (3.7 miles) south of the junction of NM128 (Jal Highway) with Rawhide Road, and 6 kilometers (3.7 miles) to the east of Nash Draw (**Figure 1** and **Figure 2**). The site is located within section 19 of NM T23S R30E. This area is within the Chihuahuan Desert Thornscrub defined by the Southwestern Regional ReGAP Vegetation map^[5] and the vegetation consists mostly of areas of grass, sparse creosote, and sparse yucca with very good visibility in most locations. See section **2.3 Local Geology** for the geology of the area. The pad and surrounding survey boundary are entirely within a high karst occurrence zone (**Figure 1**) and are located entirely within New Mexico State Land Office managed lands (**Figure 2**).

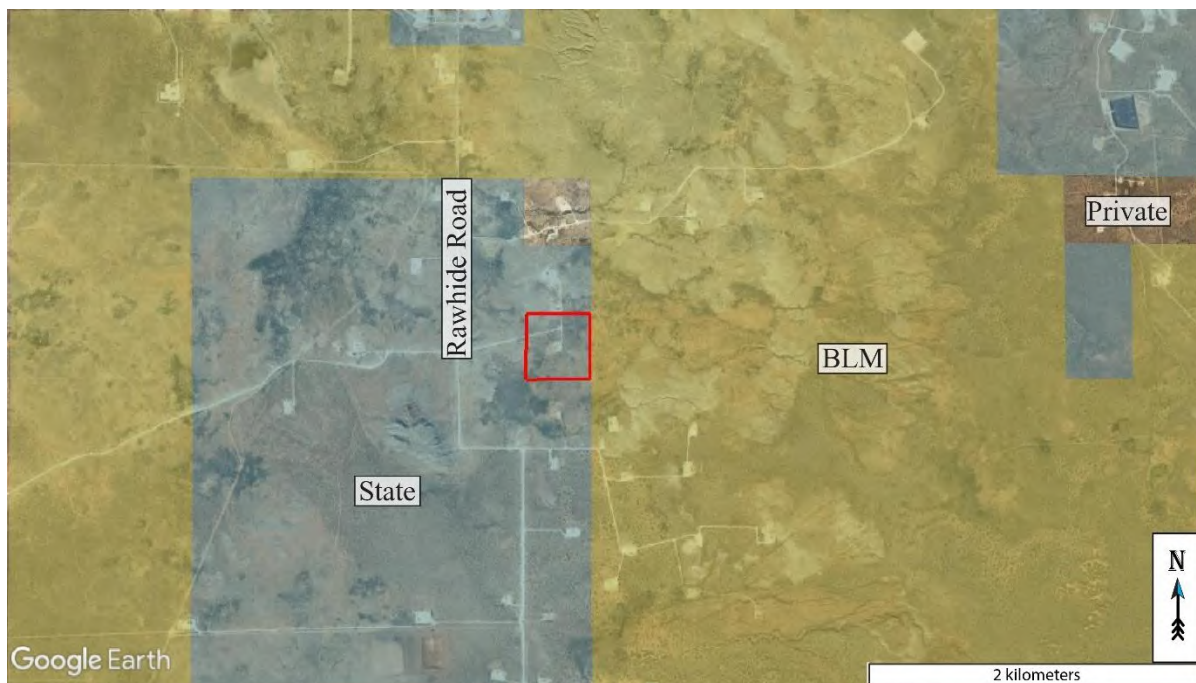


Figure 2: Land ownership overview. Yellow transparent area: BLM-CFO managed land. Blue transparent area: New Mexico State Land Office managed land. No color: Private land. Background image credit: Google Earth. Image date: November 02, 2017. Datum: WGS-84.

2.3 Local Geology

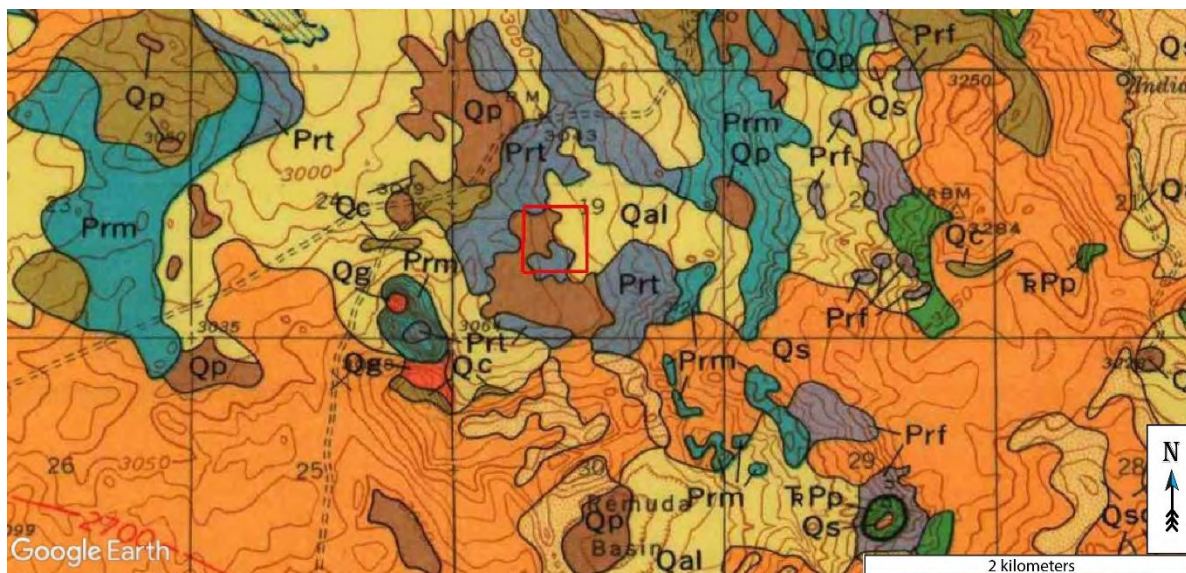


Figure 3: Geology overview. Red polygon highlights the survey area. Geologic Members of the Permian Rustler Formation: Prc - Culebra Dolomite Member, Prt - Tamarisk Member, Prm - Magenta Member, Prf - Forty-niner Member. TrPp: Dewey Lake Formation (referred to by the name "Pierce Canyon Formation" in the geologic map and associated report. Please note the Pierce Canyon Formation has since been combined with the Dewey Lake Formation and classified as a single unit under the latter name). Qg: Quaternary Gatuna Formation. Qc: Quaternary caliche. Qal: Quaternary alluvium. Qp: Quaternary lacustrine and playa lake deposits. Qs: Quaternary sand. Qsd: Quaternary sand dune deposits. Map credit: Surface geology of the Nash Draw Quadrangle, Eddy County, New Mexico, scale: 1:62,500 (1963), and Google Earth. Image date: November 02, 2017. Datum: WGS-84.

The area surveyed for the Remuda project site is located 6 kilometers west of a large, partially closed karst depression known as Nash Draw^[6] at an elevation of 930 meters (3,050 feet), plus or minus 4 meters (12 feet), within an area underlain by the Permian Rustler Formation. The area is mantled by thin gypsiferous and calcareous soils (Qc) and quaternary alluvial sands (Qs and Qsd) between 0 and 5 meters in depth which, in turn, overlie the Quaternary Gatuna Formation (Qg), Dewey Lake Formation (TrPp), and then the Rustler Formation^[6] (**Figure 3**). The Rustler Formation is an evaporite facies and is composed mainly of thin siltstones and sandstones interbedded with claystones, dolomite, and gypsum^[4], and contains both karst-forming strata (the Forty-niner and Tamarisk members) and two shallow aquifers (the Magenta and Culebra Dolomite members). The Rustler overlies the Permian Salado Formation (Psl, not shown), a layer of extremely soluble halite, which can easily be dissolved to create caves, sinkholes, and other karst features^[3]. The Rustler may be subject to collapse if a void has developed beneath it in the Salado Formation^[4]. Two easily accessible geologic maps that cover the survey area are the Geologic Atlas of Texas - Hobbs Sheet (1976) at 1:250,000 scale, and the Surface Geology of Nash Draw Quadrangle, Eddy County, New Mexico (1963) at 1:62,500 scale.

2.3 Description of Survey

For this survey 8 lines were walked in a raster pattern at 50-meter (165 feet) intervals in the designated area, providing 90 to 100% coverage for features greater than 50 centimeters (20 inches) in diameter (**Table 1**).

Part of the study area was covered by the Remuda Basin Central Tank Battery survey completed by Garrett Jorgensen on January 30, 2020. The Remuda 02 survey was completed by Garrett Jorgensen on February 27, 2020. The total distance walked was 3.7 kilometers (2.3 miles) and the total area covered was 0.1 square kilometers (24.3 acres).

Table 1: Survey Track Data Files.

File Name	Surveyor	Date	Length (km/miles)	Area (km ² /Ac)
RB2SRV_D1S1.kmz	Jorgensen	02/27/2020	3.71/2.31	0.10/24.3

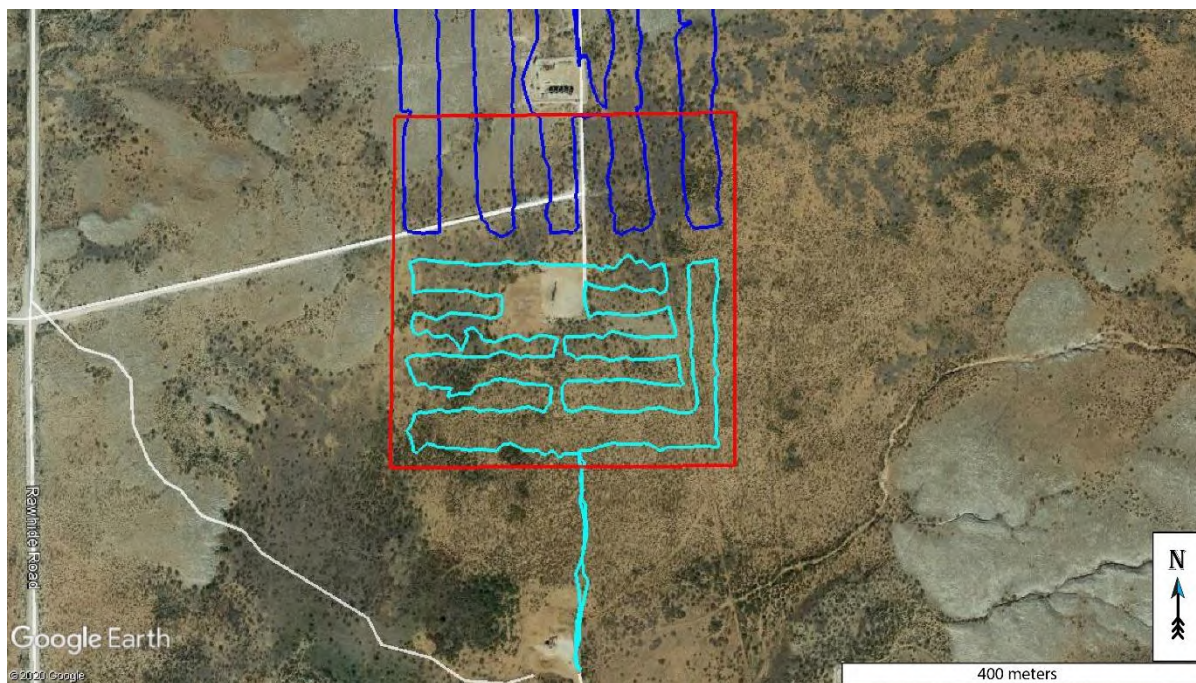


Figure 4: Survey overview. Blue wavy lines are the actual survey lines walked (dark blue is the survey completed January 30, 2020; light blue is the Remuda 02 survey completed February 27, 2020). Red polygon is the 200-meter buffer study area. Background image credit: Google Earth. Image date: November 02, 2017. Datum: WGS-84.

2.4 Description of Karst Features

No surface karst features were located within the 200-meter boundary of the pedestrian survey area for the Remuda project.

3.0 RECOMMENDATIONS

No surface karst features were located during this survey. Based on the above findings, allowing use of medium karst occurrence zone spill remediation procedures may be considered by the Oil Conservation Division within the 200-meter survey area. Confirmation to use a lower remediation level should be received from the Oil Conservation Division before proceeding.

Vigilance during remediation is paramount. If voids are encountered during trenching or digging contact the New Mexico State Oil Conservation Division if on State land, and the Bureau of Land Management – Carlsbad Field Office at (575) 234-5972 if on BLM land and request an onsite investigation from a karst expert. A karst consultant can generally be onsite in Eddy County within five hours.

4.0 REFERENCES

1. Rybacki, K., *Karst Potential Map*. CFO Basemap, 2019.
2. Scholle, P.A., *Geologic Map of New Mexico*. 2003. (1:500,000).
3. Johnson, K.S., *Evaporite Karst in the United States*. Carbonates and Evaporites, 1997. **12(1)**: p. 2-14.
4. Martinez, J.D., K.S. Johnson, and J.T. Neal, *Sinkholes in Evaporite Rocks*. American Scientist, 1998. **86(1-2)**: p. 38-51.
5. Whitehead, W. and C. Flynn, *Plant Utilization in Southeastern New Mexico: Botany, Ethnobotany, and Archaeology*. 2017, Carlsbad, NM: Bureau of Land Management, Carlsbad Field Office.
6. Vine, J.D., *Surface Geology of Nash Draw Quadrangle Eddy County New Mexico*, 1963.

5.0 GLOSSARY OF TERMS

BLM	Bureau of Land Management
CFO	Carlsbad Field Office
cave	A natural opening at the surface, large enough for a person to enter.
GPS	Global Positioning System
NMSLO	New Mexico State Land Office
playa lake	A natural depression on the surface that collects rainwater. Some contain swallets and/or caves, others do not.
pseudokarst	Karst-like terrain that forms through processes other than dissolution.
swallet	A natural opening in the surface, too small for a person, that drains water to an aquifer. Some are "open," meaning a void can be seen below; some are "closed," meaning they are full of sediment.
WGS	World Geodetic System



ATTACHMENT 3: LITHOLOGIC / SOIL SAMPLE LOGS





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

Identifier:

PH01

Date:

10.29.19

Project Name:

Remuda State Basin H2

RP Number:

2RP-4585/1534

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By:

SL

Method: Truck hoe

Hole Diameter:

Total Depth: 4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1000 D	3.54	0.0	N	PH01	1	1	CL	1-4 Sandy clay, red brown, low plasticity low cohesiveness, m-f, poorly graded, no stain no odor
1010 D	3.6750	0.0	N	PH01A	2	2		
1020 D	4.41075	0.0	N	PH01B	3	3		4 caliche gravel
1030 D	3.6750	0.0	N	PH01C	4	4		
					5			TD/ Refusal @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Identifier:

PH02

Date:

10.29.19

Project Name:

Remuda Basin #2

RP Number:

2EP/4585/1534

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: Track hoe

Hole Diameter:

Total Depth: 6'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1045	D 1.2 4129	0.0	N	PH02	1	1		1-4
1055	D 2.1 4179	0.0	N	PH02A	2	2	CL	Sandy clay, red, brown, no odor, no stain, low cohesiveness, low plasticity, m-1, poorly graded
1105	D 2.8 493	0.0	N	PH02B	3	3		
1115	D 5 1372	0.0	N	PH02C	4	4		4 - some calcic gravel
1125	D 3.2 616	0.0	N	PH02D	5	5	CEHE	5-6
1135	D 2.2 342	0.0	N	PH02E	6	6		Sand w/ calcic, tan brown, no odor, no stain m-1, poorly graded some silt
					7			TD @ 6'
					8			
					9			
					10			
					11			
					12			



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

Identifier:

PH03

Date:

10.29.19

Project Name:

Remuda Basin #2

RP Number:

2RP-4585/1534

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: Track hoe

Hole Diameter:

Total Depth: 6'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1150	D	0.4	N	PH03	1	1	CL	1-2 sandy clay, no odor, no stain, low plasticity, low cohesiveness, m-f, poorly graded, Browned - 2- odor
1200	D	2.1	N	PH03A	2	2		
1210	D	3	N	PH03B	3	3	CCHE	3-4 caliche, with sand, tan, odor, no stain
1220	D	2	N	PH03C	4	4		
1230	M	0.0	N	PH03D	5	5	CL	5-6, clayey sand, with some caliche, tan, Brown + gypsum, some (1-1.5 inches)
1240	M	0.0	N	PH03E	6	6		no odor, no staining, low plasticity, low cohesiveness, poorly graded, m-f
					7			
					8			
					9			
					10			
					11			
					12			

TD @ 6'



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

Identifier:

PH04

Date:

10-29-19

Project Name:

Removal Basin site #2

RP Number:

2RP-4585/1534

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By:

SL

Method: Trackhoe

Hole Diameter:

Total Depth:

4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1255	D	<1	0.0	N	PH04	1	1	1-3
		2179					CL	
1305	D	<1	0.0	N	PH04A	2	2	clayey sand, Brown, no odor, no stain, m-t, poorly graded, low plasticity, low cohesiveness
1315	D	<1	0.0	N	PH04B	3	3	
1325	D	<1	0.0	N	PH04C	4	4	4' Caliche, tan, off white, no odor, no stain
					5			TD @ 4' - refusal
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Identifier:

PH05

Date:

10.29.19

Project Name:

Remuda Basin #2

RP Number:

2RP-4505/1534

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: Trackhoe

Hole Diameter:

Total Depth:

5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1400	D	<1 4179	0.3	NM	PH05	1	i	1-3
1410	D	<1	0.4	N	PH05A	2	2	CL
1420	D	<1	0.8	N	PH05B	3	3	Clayey sand, Brown, no odor, no stain, low plasticity, low cohesiveness, m-f, poorly graded
1430	D	<1	0.1	N	PH05C	4	4	CCHE
1440	D	<1	1.0	N	PH05D	5	5	4-5 cathe, tan, off white, no odor, no stain
					6			TD @ 5' - refusal
					7			
					8			
					9			
					10			
					11			
					12			



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

Identifier:

PH06

Date:

10.24.19

Project Name:

Remuda State Basin #2

RP Number:

RRP-4565/1534

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID Chloride

Logged By: SL

Method: TrackLog

Hole Diameter:

1

Total Depth:

9'

Comments:

Horizontal Reserve Pit

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			1-9
1500	D	CI	1.5	N	PH06	1	1	CL Ch. yey sand, Brown/red, no odor, no stain low cohesiveness, low plasticity, m-f, poorly graded
1510	D	2.8 443	1.1	N	PH06A	2	2	
1520	D	3.0 554	1.1	N	PH06B	3	3	
1530	D	5.2 1484	1.4	N	PH06C	4	4	
1540	D	5.8 1848	1.0	N	PH06D	5	5	
1550	M	5.4 1602	0.7	N	PH06E	6	6	
1600	M	4.6 1170	0.9	N	PH06F	7	7	
1610	M	4.0 907	1.1	N	PH06G	8	8	
1620	M	4.6 1170	1.2	N	PH06H	9	9	
					10			TD @ 9' - refusal
					11			
					12			

9' calc. shell, tan, off white



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

Identifier:

PH07

Date:

10-29-19

Project Name:

Remuda State Basin #2

RP Number:

2RP 4585/1534

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: Trackha

Hole Diameter:

Total Depth:

6'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1640 D	3.4 683	0.7	N	PH07	1	1		1-6
1650 D	3 554	0.0	N	PH07A	2	2	CL	Clayey sand, Brown, Red, no odor, no stain, low cohesiveness, low plasticity, m-f, poorly sorted
1700 D	3.8 829	1.2	N	PH07B	3	3		
1710 b	2.0 417	0.6	N	PH07C	4	4		
1720 D	2.2 342	0.7	N	PH07D	5	5		
1730 D	2.1 4179	0.1	N	PH07E	6	6		
					7			TD @ 6
					8			
					9			
					10			
					11			
					12			



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

Identifier:
PH08

Date:
10.30.19

Project Name:
Remuda Basin State #2

RP Number:
2RP-15374585

Logged By: SL

Method: Track log

Hole Diameter: —

Total Depth:
6

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:
PID Chloride

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	3.6 150	0.0	N	PH08	1	1	CL	1-4
D	2.0 297	0.0	N	PH08A	2	2		Clayey sand, Brown, no stain, no odor, low plasticity, low cohesiveness, m-f, poorly graded
D	2.0 297	0.0	N	PH08C	3	3		
D	2.1 2179	0.0	N	PH08C	4	4		
D	2.1	0.0	N	PH08D	5	5	CLAYE	5-6
D	2.1	0.0	N	PH08E	6	6		caliche, tan off white, no odor, no stain
					7			TO E 6
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH09	Date: 10.30.19					
		Project Name: Remuda Basin Site #2	RP Number: RRP-1534/4585					
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening: ☒ PID ☒ Chloride	Logged By: SL Method: Track hoe					
Comments: refusal @ 3'		Hole Diameter:	Total Depth: 3'					
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	20 297	0.0	N	PH09	1	1		1-2 clay sand, Brown, no stain, no odor
D	22 342	0.0	N	PH09A	2	2	CL	low plasticity, low cohesiveness, m-f, poorly graded
D	1.8 352	0.0	N	PH09B	3	3	CHH	3 caliche, tan, off white, no stain, no odor
					4			TD- Refusal @ 3'
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH10		Date: 10.30.19		
				Project Name: Remuda Basin Stake #2		RP Number: WRP-1537/4585		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: SL		Method: Trackhoe		
Lat/Long:		Field Screening: PIP Chloride		Hole Diameter:		Total Depth:		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	4.0 907	0.2	N	PH10	1	1	CL	1-2 Clayey Sand, Brown, no staining, no odor, low plasticity, low cohesiveness, m-f, poorly graded
D	4.4 1075	0.4	N	PH10A	2	2		-2- calcareous gravel, some
D	2.0 297	0.6	N	PH10B	3	3	CL HL	3-4 caliche, off white, fine, no odor, no stain
D	3.0 554	0.8	N	PH10C	4	4		
					5			TOUGH - Bucket Refusal
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Identifier:

PH11

Date:

10.30.19

Project Name:

Remuda Basin State #2

RP Number:

2RP-153414585

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: SL

Method: Trackhoe

Lat/Long:

Field Screening:

PHD

Chloride

Hole Diameter:

Total Depth: 31

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	4.2 991	6.1	N	PH11	0			1-2
D	3.9 823	0.2	N	PH11A	1	1	CL	(clayey sand, Brown, no stain, no odor, low plasticity, low cohesiveness, m-f poorly graded
D	1.8 252	0.2	N	PH11B	2	2	CL	2 caliche gravel,
					3	3	CLHE	3 caliche, tan, off white, no odor, no stain
					4			TD, refusal @ 31'
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Identifier:

PH12

Date:

11.4.19

Project Name:

Remuda Hot Basin #2

RP Number:

2LP-1534/4585

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: Trackline

Hole Diameter:

Total Depth:

5'

Comments:

TDE 5, refusal

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1215	D	5.2 1484	2.0	N	PH12	1	1	CL
								1-3 clayey sand, Brown, no odor, no stain, low cohesiveness, low plasticity, m-f, poorly graded
1225	D	6.2 2134	1.7	N	PH12A	2	2	
1230	M	6.8 2632	1.7	N	PH12B	3	3	
1235	M	4.0 907	0.9	N	PH12C	4	4	SP-SM
								3-5 sand w/ caliche gravel, Brownish, offwhite, m-f, poorly graded, no odor, no stain
1245	D	3.6 750	0.6	N	PH12D	5	5	
					6			
					7			
					8			
					9			
					10			
					11			
					12			

TD @ 5', refusal



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

Identifier:

PH13

Date:

11-4-19

Project Name:

Removal Basin State #2

RP Number:

2RP-1534/4585

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PH

Chloride

Logged By: SL

Method: Trackhoe

Hole Diameter:

Total Depth:

3

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1300	D	4.8 1271	1.7	N	PH13	1	1	1-2
1315	D	4.2 991	1.3	N	PH13A	2	2	CL Clayey Sand, Brown, no odor, no stain, low plasticity, low cohesiveness m-f, poorly graded
1325	D	5 1312	0.8	N	PH13B	3	3	3- caliche gravel, sand
					4			caliche, tan, off white, no odor, no stain
					5			TD @ 3', refusal
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Identifier:

PH14

Date:

11-4-19

Project Name:

Remuda Basin Side #2

RP Number:

ZAP-1534/4585

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: Track hoe

Hole Diameter:

Total Depth:

4

Comments:

TOC 4'

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1345 D	7.6 3489	1.6	N	PH14Y	1	1	SP-SC	i-4
1355 M	7.0 2822	1.4	N	PH14A	2	2		Sand, Brown, med, poorly sorted, no staining, no odor, trace silt
1410 M	8.0 3489	1.8	N	PH14B	3	3		
1420 M	6.0 1455	2.0	N	PH14C	4	4		
					5			TOC @ 4' - refusal
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH01		3/17/2020				
		Site Name: Remuda Basin State #2						
		RP or Incident Number: 2RP-4585						
LTE Job Number: 12918133								
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:		Logged By: SL				
		Chloride, PID		Method: Hand Auger				
Hole Diameter:								
Total Depth: 1'								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
	3,147	0.3	N	BH01	0.5'	0		Clayey sand, no odor, no stain, m.-f., poorly graded, low plasticity, low cohesiveness Same as Above
	2,304	0.3	N	BH01A	1'	1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH02		3/17/2020				
		Site Name: Remuda Basin State #2						
		RP or Incident Number: 2RP-4585						
LTE Job Number: 12918133								
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:		Logged By: SL				
		Chloride, PID		Method: Hand Auger				
Hole Diameter:								
Total Depth: 1'								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
	3,684	0.2	N	BH02	0.5'	0		Clayey sand, no odor, no stain, m.-f., poorly graded, low plasticity, low cohesiveness Same as Above
	4,004	0.1	N	BH02A	1'	1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH03		3/17/2020				
		Site Name: Remuda Basin State #2						
		RP or Incident Number: 2RP-4585						
LTE Job Number: 12918133								
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:		Logged By: SL				
		Chloride, PID		Method: Hand Auger				
Hole Diameter:								
Total Depth: 1'								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
	6,131	0.0	N	BH03	0.5'	0		Clayey sand, no odor, no stain, m.-f., poorly graded, low plasticity, low cohesiveness Same as Above
	4,378	0.2	N	BH03A	1'	1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ATTACHMENT 4: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: Northern view of excavated PH04 area.



Photograph 2: Northern view of excavated PH07 area.



Photograph 3: Southern view of excavated PH10 area.



Photograph 4: Western view of excavated PH06 area.

ATTACHMENT 5: LABORATORY ANALYTICAL REPORTS



Analytical Report 641798

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda State Basin #2

2RP-1534/4585

05-NOV-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



05-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **641798**

Remuda State Basin #2

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 641798. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 641798 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	10-29-19 10:00	1 ft	641798-001
PH01A	S	10-29-19 10:10	2 ft	641798-002
PH01B	S	10-29-19 10:20	3 ft	641798-003
PH01C	S	10-29-19 10:30	4 ft	641798-004
PH02	S	10-29-19 10:45	1 ft	641798-005
PH02A	S	10-29-19 10:55	2 ft	641798-006
PH02B	S	10-29-19 11:05	3 ft	641798-007
PH02C	S	10-29-19 11:15	4 ft	641798-008
PH02D	S	10-29-19 11:25	5 ft	641798-009
PH02E	S	10-29-19 11:35	6 ft	641798-010
PH03	S	10-29-19 11:50	1 ft	641798-011
PH03A	S	10-29-19 12:00	2 ft	641798-012
PH03B	S	10-29-19 12:10	3 ft	641798-013
PH03C	S	10-29-19 12:20	4 ft	641798-014
PH03D	S	10-29-19 12:30	5 ft	641798-015
PH03E	S	10-29-19 12:40	6 ft	641798-016
PH04	S	10-29-19 12:55	1 ft	641798-017
PH04A	S	10-29-19 13:05	2 ft	641798-018
PH04B	S	10-29-19 13:15	3 ft	641798-019
PH04C	S	10-29-19 13:25	4 ft	641798-020
PH05	S	10-29-19 14:00	1 ft	641798-021
PH05A	S	10-29-19 14:10	2 ft	641798-022
PH05B	S	10-29-19 14:20	3 ft	641798-023
PH05C	S	10-29-19 14:30	4 ft	641798-024
PH05D	S	10-29-19 14:40	5 ft	641798-025
PH06	S	10-29-19 15:00	1 ft	641798-026
PH06A	S	10-29-19 15:10	2 ft	641798-027
PH06B	S	10-29-19 15:20	3 ft	641798-028
PH06C	S	10-29-19 15:30	4 ft	641798-029
PH06D	S	10-29-19 15:40	5 ft	641798-030
PH06E	S	10-29-19 15:50	6 ft	641798-031
PH06F	S	10-29-19 10:00	7 ft	641798-032
PH06G	S	10-29-19 16:10	8 ft	641798-033
PH06H	S	10-29-19 16:20	9 ft	641798-034
PH07	S	10-29-19 16:40	1 ft	641798-035
PH07A	S	10-29-19 16:50	2 ft	641798-036
PH07B	S	10-29-19 17:00	3 ft	641798-037
PH07C	S	10-29-19 17:10	4 ft	641798-038
PH07D	S	10-29-19 17:20	5 ft	641798-039
PH07E	S	10-29-19 17:30	6 ft	641798-040
PH08	S	10-30-19 09:10	1 ft	641798-041
PH08A	S	10-30-19 09:20	2 ft	641798-042
PH08B	S	10-30-19 09:30	3 ft	641798-043

**Sample Cross Reference 641798****LT Environmental, Inc., Arvada, CO**

Remuda State Basin #2

PH08C	S	10-30-19 09:40	4 ft	641798-044
PH08D	S	10-30-19 09:50	5 ft	641798-045
PH08E	S	10-30-19 10:00	6 ft	641798-046
PH09	S	10-30-19 10:20	1 ft	641798-047
PH09A	S	10-30-19 10:30	2 ft	641798-048
PH09B	S	10-30-19 10:40	3 ft	641798-049
PH10	S	10-30-19 11:00	1 ft	641798-050
PH10A	S	10-30-19 11:10	2 ft	641798-051
PH10B	S	10-30-19 11:20	3 ft	641798-052
PH10C	S	10-30-19 11:30	4 ft	641798-053
PH11	S	10-30-19 13:10	1 ft	641798-054
PH11A	S	10-30-19 13:20	2 ft	641798-055
PH11B	S	10-30-19 13:30	3 ft	641798-056

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Remuda State Basin #2**Project ID: 2RP-1534/4585
Work Order Number(s): 641798Report Date: 05-NOV-19
Date Received: 10/31/2019**Sample receipt non conformances and comments:**

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106286 TPH by SW8015 Mod

Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 641798-024,641798-027,641798-031,641798-035.

Batch: LBA-3106309 TPH by SW8015 Mod

Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 641798-044,641798-048,641798-050,641798-051,641798-052,641798-054,641798-055.

Batch: LBA-3106318 BTEX by EPA 8021B

Benzene, Ethylbenzene, Toluene, m,p-Xylenes , o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 641798-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020

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

Lab Sample ID 641798-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Benzene, Ethylbenzene, Toluene, m,p-Xylenes , o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641798-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.

The Laboratory Control Sample for Toluene, m,p-Xylenes , Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Remuda State Basin #2**

Project ID: 2RP-1534/4585
Work Order Number(s): 641798

Report Date: 05-NOV-19
Date Received: 10/31/2019

Batch: LBA-3106324 Chloride by EPA 300

Lab Sample ID 641798-031 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641798-021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038, -039, -040.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106339 BTEX by EPA 8021B

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

Batch: LBA-3106340 BTEX by EPA 8021B

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

Lab Sample ID 641798-041 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641798-041, -042, -043, -044, -045, -046, -047, -048, -049, -050, -051, -052, -053, -054, -055, -056.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106388 Chloride by EPA 300

Lab Sample ID 641798-051 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641798-041, -042, -043, -044, -045, -046, -047, -048, -049, -050, -051, -052, -053, -054, -055, -056.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641798-001	641798-002	641798-003	641798-004	641798-005	641798-006
	<i>Field Id:</i>	PH01	PH01A	PH01B	PH01C	PH02	PH02A
	<i>Depth:</i>	1- ft	2- ft	3- ft	4- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-29-19 10:00	Oct-29-19 10:10	Oct-29-19 10:20	Oct-29-19 10:30	Oct-29-19 10:45	Oct-29-19 10:55
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11
	<i>Analyzed:</i>	Nov-01-19 14:18	Nov-01-19 14:38	Nov-01-19 14:59	Nov-01-19 15:19	Nov-01-19 15:39	Nov-01-19 16:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000994 0.000994	<0.000998 0.000998
Toluene		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000994 0.000994	<0.000998 0.000998
Ethylbenzene		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000994 0.000994	<0.000998 0.000998
m,p-Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	0.00378 0.00200
o-Xylene		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000994 0.000994	0.00134 0.000998
Total Xylenes		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000994 0.000994	0.00512 0.000998
Total BTEX		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000994 0.000994	0.00512 0.000998
Chloride by EPA 300	<i>Extracted:</i>	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11
	<i>Analyzed:</i>	Nov-01-19 12:34	Nov-01-19 12:53	Nov-01-19 12:59	Nov-01-19 13:06	Nov-01-19 13:34	Nov-01-19 13:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		778 49.9	958 49.8	1110 99.8	852 198	<9.98 9.98	71.8 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00
	<i>Analyzed:</i>	Nov-01-19 17:56	Nov-01-19 20:20	Nov-01-19 20:39	Nov-01-19 21:54	Nov-01-19 22:14	Nov-01-19 22:34
	<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)		<50.2 50.2	<50.1 50.1	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.1 50.1
Diesel Range Organics (DRO)		<50.2 50.2	<50.1 50.1	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.1 50.1	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.1 50.1
Total GRO-DRO		<50.2 50.2	<50.1 50.1	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.1 50.1
Total TPH		<50.2 50.2	<50.1 50.1	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.1 50.1

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	641798-007	641798-008	641798-009	641798-010	641798-011	641798-012
	Field Id:	PH02B	PH02C	PH02D	PH02E	PH03	PH03A
	Depth:	3- ft	4- ft	5- ft	6- ft	1- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-29-19 11:05	Oct-29-19 11:15	Oct-29-19 11:25	Oct-29-19 11:35	Oct-29-19 11:50	Oct-29-19 12:00
BTEX by EPA 8021B	Extracted:	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11
	Analyzed:	Nov-01-19 16:20	Nov-01-19 16:41	Nov-01-19 17:01	Nov-01-19 17:31	Nov-01-19 18:59	Nov-01-19 19:20
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000992 0.000992
Toluene		<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000992 0.000992
Ethylbenzene		<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000992 0.000992
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00198 0.00198
o-Xylene		<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000992 0.000992
Total Xylenes		<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000992 0.000992
Total BTEX		<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000992 0.000992
Chloride by EPA 300	Extracted:	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11
	Analyzed:	Nov-01-19 13:59	Nov-01-19 14:05	Nov-01-19 14:12	Nov-01-19 14:18	Nov-01-19 14:24	Nov-01-19 14:44
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		881 50.3	1500 100	841 500	511 499	709 49.8	417 198
TPH by SW8015 Mod	Extracted:	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00
	Analyzed:	Nov-01-19 22:53	Nov-01-19 23:13	Nov-01-19 23:33	Nov-01-19 23:53	Nov-02-19 00:33	Nov-02-19 13:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.2 50.2	<50.0 50.0
Diesel Range Organics (DRO)		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.0 50.0	412 50.2	1350 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.0 50.0	80.6 50.2	253 50.0
Total GRO-DRO		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.0 50.0	412 50.2	1350 50.0
Total TPH		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.0 50.0	493 50.2	1600 50.0

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641798-013	641798-014	641798-015	641798-016	641798-017	641798-018
	<i>Field Id:</i>	PH03B	PH03C	PH03D	PH03E	PH04	PH04A
	<i>Depth:</i>	3- ft	4- ft	5- ft	6- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-29-19 12:10	Oct-29-19 12:20	Oct-29-19 12:30	Oct-29-19 12:40	Oct-29-19 12:55	Oct-29-19 13:05
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 09:11
	<i>Analyzed:</i>	Nov-01-19 19:40	Nov-01-19 20:01	Nov-01-19 20:21	Nov-01-19 20:41	Nov-01-19 21:02	Nov-01-19 21:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	<0.000998 0.000998	<0.000998 0.000998
Toluene		0.00348 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	<0.000998 0.000998	<0.000998 0.000998
Ethylbenzene		0.00117 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	0.00342 0.000998	<0.000998 0.000998
m,p-Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	0.00293 0.00200	<0.00200 0.00200
o-Xylene		<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	<0.000998 0.000998	<0.000998 0.000998
Total Xylenes		<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	0.00293 0.000998	<0.000998 0.000998
Total BTEX		0.00465 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	0.00635 0.000998	<0.000998 0.000998
Chloride by EPA 300	<i>Extracted:</i>	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11
	<i>Analyzed:</i>	Nov-01-19 14:50	Nov-01-19 15:16	Nov-01-19 16:19	Nov-01-19 15:28	Nov-01-19 15:34	Nov-01-19 15:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		299 49.3	582 504	581 101	462 50.4	<9.98 9.98	<10.1 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00
	<i>Analyzed:</i>	Nov-02-19 00:52	Nov-02-19 01:12	Nov-02-19 01:32	Nov-02-19 01:52	Nov-02-19 02:12	Nov-02-19 02:32
	<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)		<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.3 50.3
Diesel Range Organics (DRO)		230 50.1	68.7 49.8	<50.0 50.0	<50.2 50.2	162 50.1	137 50.3
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.3 50.3
Total GRO-DRO		230 50.1	68.7 49.8	<50.0 50.0	<50.2 50.2	162 50.1	137 50.3
Total TPH		230 50.1	68.7 49.8	<50.0 50.0	<50.2 50.2	162 50.1	137 50.3

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641798-019	641798-020	641798-021	641798-022	641798-023	641798-024
	<i>Field Id:</i>	PH04B	PH04C	PH05	PH05A	PH05B	PH05C
	<i>Depth:</i>	3- ft	4- ft	1- ft	2- ft	3- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-29-19 13:15	Oct-29-19 13:25	Oct-29-19 14:00	Oct-29-19 14:10	Oct-29-19 14:20	Oct-29-19 14:30
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 09:11	Nov-01-19 09:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11
	<i>Analyzed:</i>	Nov-01-19 21:42	Nov-01-19 22:03	Nov-01-19 14:24	Nov-01-19 14:43	Nov-01-19 15:02	Nov-01-19 15:21
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101
Toluene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101
Ethylbenzene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101
m,p-Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
o-Xylene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101
Total Xylenes		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101
Total BTEX		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11
	<i>Analyzed:</i>	Nov-01-19 16:01	Nov-01-19 16:25	Nov-01-19 17:01	Nov-01-19 17:19	Nov-01-19 17:25	Nov-01-19 17:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<10.1 10.1	<9.98 9.98	<9.96 9.96	<10.1 10.1	112 9.96	42.9 9.92
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00
	<i>Analyzed:</i>	Nov-02-19 02:52	Nov-02-19 03:12	Nov-02-19 04:52	Nov-02-19 05:51	Nov-02-19 06:11	Nov-02-19 06:31
	<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)		<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3
Diesel Range Organics (DRO)		55.2 50.2	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3
Total GRO-DRO		55.2 50.2	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3
Total TPH		55.2 50.2	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641798-025	641798-026	641798-027	641798-028	641798-029	641798-030
	<i>Field Id:</i>	PH05D	PH06	PH06A	PH06B	PH06C	PH06D
	<i>Depth:</i>	5- ft	1- ft	2- ft	3- ft	4- ft	5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-29-19 14:40	Oct-29-19 15:00	Oct-29-19 15:10	Oct-29-19 15:20	Oct-29-19 15:30	Oct-29-19 15:40
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11
	<i>Analyzed:</i>	Nov-01-19 15:40	Nov-01-19 16:00	Nov-01-19 16:19	Nov-01-19 16:38	Nov-01-19 16:57	Nov-01-19 17:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Toluene		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Ethylbenzene		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Total Xylenes		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Total BTEX		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Chloride by EPA 300	<i>Extracted:</i>	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11
	<i>Analyzed:</i>	Nov-01-19 17:37	Nov-01-19 17:55	Nov-01-19 18:01	Nov-01-19 18:07	Nov-01-19 18:13	Nov-01-19 18:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		50.1 9.88	82.8 49.9	837 49.8	753 49.8	1570 99.2	2600 98.4
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00
	<i>Analyzed:</i>	Nov-02-19 06:51	Nov-02-19 07:11	Nov-02-19 07:31	Nov-02-19 07:51	Nov-02-19 08:11	Nov-02-19 08:30
	<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	<50.3 50.3	<50.1 50.1	<49.9 49.9	<50.3 50.3	<50.1 50.1
Diesel Range Organics (DRO)		<50.0 50.0	<50.3 50.3	<50.1 50.1	<49.9 49.9	<50.3 50.3	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.3 50.3	<50.1 50.1	<49.9 49.9	<50.3 50.3	<50.1 50.1
Total GRO-DRO		<50.0 50.0	<50.3 50.3	<50.1 50.1	<49.9 49.9	<50.3 50.3	<50.1 50.1
Total TPH		<50.0 50.0	<50.3 50.3	<50.1 50.1	<49.9 49.9	<50.3 50.3	<50.1 50.1

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Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641798-031	641798-032	641798-033	641798-034	641798-035	641798-036
	<i>Field Id:</i>	PH06E	PH06F	PH06G	PH06H	PH07	PH07A
	<i>Depth:</i>	6- ft	7- ft	8- ft	9- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-29-19 15:50	Oct-29-19 10:00	Oct-29-19 16:10	Oct-29-19 16:20	Oct-29-19 16:40	Oct-29-19 16:50
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11
	<i>Analyzed:</i>	Nov-01-19 18:20	Nov-01-19 18:39	Nov-01-19 18:58	Nov-01-19 19:18	Nov-01-19 19:36	Nov-01-19 19:56
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Toluene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Ethylbenzene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	0.00258 0.00101
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	0.00225 0.00202
o-Xylene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Total Xylenes		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	0.00225 0.00101
Total BTEX		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	0.00483 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11
	<i>Analyzed:</i>	Nov-01-19 18:25	Nov-01-19 18:42	Nov-01-19 18:48	Nov-01-19 19:06	Nov-01-19 19:12	Nov-01-19 19:18
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1650 99.6	958 498	758 98.8	968 49.6	1600 49.4	1130 50.0
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00
	<i>Analyzed:</i>	Nov-02-19 09:10	Nov-02-19 09:30	Nov-02-19 09:50	Nov-02-19 10:10	Nov-02-19 10:59	Nov-02-19 11:19
	<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)		<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.1 50.1	<50.3 50.3	<50.2 50.2
Diesel Range Organics (DRO)		<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.1 50.1	<50.3 50.3	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.1 50.1	<50.3 50.3	<50.2 50.2
Total GRO-DRO		<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.1 50.1	<50.3 50.3	<50.2 50.2
Total TPH		<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.1 50.1	<50.3 50.3	<50.2 50.2

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641798-037	641798-038	641798-039	641798-040	641798-041	641798-042
	<i>Field Id:</i>	PH07B	PH07C	PH07D	PH07E	PH08	PH08A
	<i>Depth:</i>	3- ft	4- ft	5- ft	6- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-29-19 17:00	Oct-29-19 17:10	Oct-29-19 17:20	Oct-29-19 17:30	Oct-30-19 09:10	Oct-30-19 09:20
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 15:11	Nov-01-19 15:11
	<i>Analyzed:</i>	Nov-01-19 20:15	Nov-01-19 20:34	Nov-01-19 20:53	Nov-01-19 21:12	Nov-02-19 00:17	Nov-02-19 00:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000992 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101
Toluene		0.00408 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101
Ethylbenzene		0.00129 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101
m,p-Xylenes		0.00236 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.000992 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101
Total Xylenes		0.00236 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101
Total BTEX		0.00773 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-01-19 10:11	Nov-04-19 10:11	Nov-04-19 10:11
	<i>Analyzed:</i>	Nov-01-19 19:24	Nov-01-19 19:30	Nov-01-19 19:36	Nov-01-19 19:42	Nov-04-19 11:05	Nov-04-19 11:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		236 10.0	730 20.2	214 10.0	51.7 9.96	1330 99.8	551 50.4
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00
	<i>Analyzed:</i>	Nov-02-19 11:39	Nov-02-19 11:59	Nov-02-19 12:19	Nov-02-19 12:39	Nov-02-19 06:31	Nov-02-19 06:51
	<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)		<49.9 49.9	<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.0 50.0
Diesel Range Organics (DRO)		<49.9 49.9	<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.0 50.0
Total GRO-DRO		<49.9 49.9	<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.0 50.0
Total TPH		<49.9 49.9	<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.0 50.0

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641798-043	641798-044	641798-045	641798-046	641798-047	641798-048
	<i>Field Id:</i>	PH08B	PH08C	PH08D	PH08E	PH09	PH09A
	<i>Depth:</i>	3- ft	4- ft	5- ft	6- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-30-19 09:30	Oct-30-19 09:40	Oct-30-19 09:50	Oct-30-19 10:00	Oct-30-19 10:20	Oct-30-19 10:30
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 15:11	Nov-01-19 15:11	Nov-01-19 15:11	Nov-01-19 15:11	Nov-01-19 15:11	Nov-01-19 15:11
	<i>Analyzed:</i>	Nov-02-19 00:56	Nov-02-19 01:15	Nov-02-19 01:34	Nov-02-19 01:53	Nov-02-19 02:12	Nov-02-19 02:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Toluene		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Ethylbenzene		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Total Xylenes		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Total BTEX		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Chloride by EPA 300	<i>Extracted:</i>	Nov-04-19 10:11	Nov-04-19 10:11	Nov-04-19 10:11	Nov-04-19 10:11	Nov-04-19 10:11	Nov-04-19 10:11
	<i>Analyzed:</i>	Nov-04-19 11:29	Nov-04-19 11:35	Nov-04-19 12:25	Nov-04-19 12:43	Nov-04-19 12:49	Nov-04-19 12:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		498 50.3	78.3 10.0	36.2 9.82	352 9.96	1070 98.6	569 99.6
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00
	<i>Analyzed:</i>	Nov-02-19 07:11	Nov-02-19 07:31	Nov-02-19 07:51	Nov-02-19 08:11	Nov-02-19 08:30	Nov-02-19 08:50
	<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)		<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.2 50.2
Diesel Range Organics (DRO)		<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.2 50.2
Total GRO-DRO		<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.2 50.2
Total TPH		<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.2 50.2

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Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641798-049	641798-050	641798-051	641798-052	641798-053	641798-054
	<i>Field Id:</i>	PH09B	PH10	PH10A	PH10B	PH10C	PH11
	<i>Depth:</i>	3- ft	1- ft	2- ft	3- ft	4- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-30-19 10:40	Oct-30-19 11:00	Oct-30-19 11:10	Oct-30-19 11:20	Oct-30-19 11:30	Oct-30-19 13:10
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-19 15:11	Nov-01-19 15:11	Nov-01-19 15:11	Nov-01-19 15:11	Nov-01-19 15:11	Nov-01-19 15:11
	<i>Analyzed:</i>	Nov-02-19 02:50	Nov-02-19 03:10	Nov-02-19 04:13	Nov-02-19 04:32	Nov-02-19 04:52	Nov-02-19 05:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Chloride by EPA 300	<i>Extracted:</i>	Nov-04-19 10:11	Nov-04-19 10:11	Nov-04-19 10:11	Nov-04-19 10:11	Nov-04-19 10:11	Nov-04-19 10:11
	<i>Analyzed:</i>	Nov-04-19 13:01	Nov-04-19 13:07	Nov-04-19 13:13	Nov-04-19 13:31	Nov-04-19 13:37	Nov-04-19 13:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		716 494	2220 200	1170 503	705 199	<497 497	7490 498
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00	Nov-01-19 16:00
	<i>Analyzed:</i>	Nov-02-19 09:30	Nov-02-19 09:50	Nov-02-19 10:10	Nov-02-19 10:59	Nov-02-19 11:19	Nov-02-19 11:39
	<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)		<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.3 50.3	<50.0 50.0
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.3 50.3	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.3 50.3	<50.0 50.0
Total GRO-DRO		<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.3 50.3	<50.0 50.0
Total TPH		<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.2 50.2	<50.3 50.3	<50.0 50.0

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641798

LT Environmental, Inc., Arvada, CO

Project Name: Remuda State Basin #2

Project Id: 2RP-1534/4585

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-31-19 04:48 pm

Report Date: 05-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	641798-055	641798-056				
	Field Id:	PH11A	PH11B				
	Depth:	2- ft	3- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Oct-30-19 13:20	Oct-30-19 13:30				
BTEX by EPA 8021B	Extracted:	Nov-01-19 15:11	Nov-01-19 15:11				
	Analyzed:	Nov-02-19 05:30	Nov-02-19 05:49				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.000988 0.000988	<0.000988 0.000988				
Toluene		<0.000988 0.000988	<0.000988 0.000988				
Ethylbenzene		<0.000988 0.000988	<0.000988 0.000988				
m,p-Xylenes		<0.00198 0.00198	<0.00198 0.00198				
o-Xylene		<0.000988 0.000988	<0.000988 0.000988				
Total Xylenes		<0.000988 0.000988	<0.000988 0.000988				
Total BTEX		<0.000988 0.000988	<0.000988 0.000988				
Chloride by EPA 300	Extracted:	Nov-04-19 10:11	Nov-04-19 10:11				
	Analyzed:	Nov-04-19 14:00	Nov-04-19 14:06				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		1360 499	<498 498				
TPH by SW8015 Mod	Extracted:	Nov-01-19 16:00	Nov-01-19 16:00				
	Analyzed:	Nov-02-19 11:59	Nov-02-19 12:19				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.0 50.0				
Diesel Range Organics (DRO)		<50.1 50.1	<50.0 50.0				
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.0 50.0				
Total GRO-DRO		<50.1 50.1	<50.0 50.0				
Total TPH		<50.1 50.1	<50.0 50.0				

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH01** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-001 Date Collected: 10.29.19 10.00 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106323

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	778	49.9	mg/kg	11.01.19 12.34		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.01.19 17.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.01.19 17.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.01.19 17.56	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.01.19 17.56	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.01.19 17.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.01.19 17.56	
o-Terphenyl	84-15-1	103	%	70-135	11.01.19 17.56	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH01**
Lab Sample Id: 641798-001

Matrix: Soil
Date Collected: 10.29.19 10.00

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 14.18	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 14.18	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 14.18	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.01.19 14.18	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 14.18	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 14.18	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 14.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	11.01.19 14.18		
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.01.19 14.18		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH01A**
Lab Sample Id: 641798-002

Matrix: Soil
Date Collected: 10.29.19 10.10

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	958	49.8	mg/kg	11.01.19 12.53		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.01.19 20.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.01.19 20.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.01.19 20.20	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.01.19 20.20	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.01.19 20.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	11.01.19 20.20	
o-Terphenyl	84-15-1	130	%	70-135	11.01.19 20.20	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH01A**
Lab Sample Id: 641798-002

Matrix: Soil
Date Collected: 10.29.19 10.10

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.01.19 14.38	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.01.19 14.38	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.01.19 14.38	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.01.19 14.38	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.01.19 14.38	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.01.19 14.38	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.01.19 14.38	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101		%	70-130	11.01.19 14.38	
4-Bromofluorobenzene	460-00-4	108		%	70-130	11.01.19 14.38	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH01B**
Lab Sample Id: 641798-003

Matrix: Soil
Date Collected: 10.29.19 10.20

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1110	99.8	mg/kg	11.01.19 12.59		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.01.19 20.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.01.19 20.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.01.19 20.39	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.01.19 20.39	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.01.19 20.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.01.19 20.39	
o-Terphenyl	84-15-1	91	%	70-135	11.01.19 20.39	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH01B**
Lab Sample Id: 641798-003

Matrix: Soil
Date Collected: 10.29.19 10.20

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.01.19 14.59	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.01.19 14.59	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.01.19 14.59	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 14.59	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.01.19 14.59	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.01.19 14.59	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.01.19 14.59	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		103	%	70-130	11.01.19 14.59	
4-Bromofluorobenzene	460-00-4		121	%	70-130	11.01.19 14.59	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH01C**
Lab Sample Id: 641798-004

Matrix: Soil
Date Collected: 10.29.19 10.30

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	852	198	mg/kg	11.01.19 13.06		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.01.19 21.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.01.19 21.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.01.19 21.54	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.01.19 21.54	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.01.19 21.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	11.01.19 21.54	
o-Terphenyl	84-15-1	76	%	70-135	11.01.19 21.54	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH01C**
Lab Sample Id: 641798-004

Matrix: Soil
Date Collected: 10.29.19 10.30

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.01.19 15.19	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.01.19 15.19	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.01.19 15.19	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.01.19 15.19	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.01.19 15.19	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.01.19 15.19	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.01.19 15.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.01.19 15.19		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.01.19 15.19		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-005 Date Collected: 10.29.19 10.45 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106323

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	11.01.19 13.34	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.01.19 22.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.01.19 22.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.01.19 22.14	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.01.19 22.14	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.01.19 22.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.01.19 22.14	
o-Terphenyl	84-15-1	91	%	70-135	11.01.19 22.14	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02**
Lab Sample Id: 641798-005

Matrix: Soil
Date Collected: 10.29.19 10.45

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.01.19 15.39	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.01.19 15.39	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.01.19 15.39	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.01.19 15.39	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.01.19 15.39	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.01.19 15.39	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.01.19 15.39	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.01.19 15.39		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.01.19 15.39		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02A**
 Lab Sample Id: 641798-006

Matrix: Soil
 Date Collected: 10.29.19 10.55

Date Received: 10.31.19 16.48
 Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	71.8	10.1	mg/kg	11.01.19 13.53		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.01.19 22.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.01.19 22.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.01.19 22.34	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.01.19 22.34	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.01.19 22.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.01.19 22.34	
o-Terphenyl	84-15-1	115	%	70-135	11.01.19 22.34	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02A**
Lab Sample Id: 641798-006

Matrix: Soil
Date Collected: 10.29.19 10.55

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.01.19 16.00	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.01.19 16.00	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.01.19 16.00	U	1
m,p-Xylenes	179601-23-1	0.00378	0.00200	mg/kg	11.01.19 16.00		1
o-Xylene	95-47-6	0.00134	0.000998	mg/kg	11.01.19 16.00		1
Total Xylenes	1330-20-7	0.00512	0.000998	mg/kg	11.01.19 16.00		1
Total BTEX		0.00512	0.000998	mg/kg	11.01.19 16.00		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.01.19 16.00		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.01.19 16.00		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02B**
Lab Sample Id: 641798-007

Matrix: Soil
Date Collected: 10.29.19 11.05

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	881	50.3	mg/kg	11.01.19 13.59		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.01.19 22.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.01.19 22.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.01.19 22.53	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.01.19 22.53	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.01.19 22.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.01.19 22.53	
o-Terphenyl	84-15-1	97	%	70-135	11.01.19 22.53	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02B**
Lab Sample Id: 641798-007

Matrix: Soil
Date Collected: 10.29.19 11.05

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 16.20	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 16.20	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 16.20	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 16.20	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 16.20	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 16.20	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 16.20	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		99	%	70-130	11.01.19 16.20	
4-Bromofluorobenzene	460-00-4		114	%	70-130	11.01.19 16.20	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02C**
Lab Sample Id: 641798-008

Matrix: Soil
Date Collected: 10.29.19 11.15

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1500	100	mg/kg	11.01.19 14.05		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.01.19 23.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.01.19 23.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.01.19 23.13	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.01.19 23.13	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.01.19 23.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.01.19 23.13	
o-Terphenyl	84-15-1	112	%	70-135	11.01.19 23.13	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02C**
 Lab Sample Id: 641798-008

Matrix: Soil
 Date Collected: 10.29.19 11.15

Date Received: 10.31.19 16.48
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.01.19 16.41	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.01.19 16.41	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.01.19 16.41	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.01.19 16.41	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.01.19 16.41	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.01.19 16.41	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.01.19 16.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.01.19 16.41		
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.01.19 16.41		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02D**
Lab Sample Id: 641798-009

Matrix: Soil
Date Collected: 10.29.19 11.25

Date Received: 10.31.19 16.48
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	841	500	mg/kg	11.01.19 14.12		50

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.01.19 23.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.01.19 23.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.01.19 23.33	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.01.19 23.33	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.01.19 23.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.01.19 23.33	
o-Terphenyl	84-15-1	96	%	70-135	11.01.19 23.33	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02D**
Lab Sample Id: 641798-009

Matrix: Soil
Date Collected: 10.29.19 11.25

Date Received: 10.31.19 16.48
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.01.19 17.01	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.01.19 17.01	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.01.19 17.01	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.01.19 17.01	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.01.19 17.01	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.01.19 17.01	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.01.19 17.01	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117		%	70-130	11.01.19 17.01	
1,4-Difluorobenzene	540-36-3	101		%	70-130	11.01.19 17.01	



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LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02E**
Lab Sample Id: 641798-010

Matrix: Soil
Date Collected: 10.29.19 11.35

Date Received: 10.31.19 16.48
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	511	499	mg/kg	11.01.19 14.18		50

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.01.19 23.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.01.19 23.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.01.19 23.53	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.01.19 23.53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.01.19 23.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.01.19 23.53	
o-Terphenyl	84-15-1	115	%	70-135	11.01.19 23.53	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH02E**
Lab Sample Id: 641798-010

Matrix: Soil
Date Collected: 10.29.19 11.35

Date Received: 10.31.19 16.48
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 17.31	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 17.31	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 17.31	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 17.31	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 17.31	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 17.31	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 17.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.01.19 17.31		
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.01.19 17.31		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03**
Lab Sample Id: 641798-011

Matrix: Soil
Date Collected: 10.29.19 11.50

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	709	49.8	mg/kg	11.01.19 14.24		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 00.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	412	50.2	mg/kg	11.02.19 00.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	80.6	50.2	mg/kg	11.02.19 00.33		1
Total GRO-DRO	PHC628	412	50.2	mg/kg	11.02.19 00.33		1
Total TPH	PHC635	493	50.2	mg/kg	11.02.19 00.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	11.02.19 00.33	
o-Terphenyl	84-15-1	90	%	70-135	11.02.19 00.33	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03**
Lab Sample Id: 641798-011

Matrix: Soil
Date Collected: 10.29.19 11.50

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.01.19 18.59	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.01.19 18.59	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.01.19 18.59	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.01.19 18.59	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.01.19 18.59	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.01.19 18.59	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.01.19 18.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.01.19 18.59		
4-Bromofluorobenzene	460-00-4	100	%	70-130	11.01.19 18.59		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03A**
Lab Sample Id: 641798-012

Matrix: Soil
Date Collected: 10.29.19 12.00

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	417	198	mg/kg	11.01.19 14.44		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.02.19 13.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	1350	50.0	mg/kg	11.02.19 13.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	253	50.0	mg/kg	11.02.19 13.38		1
Total GRO-DRO	PHC628	1350	50.0	mg/kg	11.02.19 13.38		1
Total TPH	PHC635	1600	50.0	mg/kg	11.02.19 13.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.02.19 13.38	
o-Terphenyl	84-15-1	105	%	70-135	11.02.19 13.38	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03A**
Lab Sample Id: 641798-012

Matrix: Soil
Date Collected: 10.29.19 12.00

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	11.01.19 19.20	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	11.01.19 19.20	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	11.01.19 19.20	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.01.19 19.20	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	11.01.19 19.20	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	11.01.19 19.20	U	1
Total BTEX		<0.000992	0.000992	mg/kg	11.01.19 19.20	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		103	%	70-130	11.01.19 19.20	
4-Bromofluorobenzene	460-00-4		100	%	70-130	11.01.19 19.20	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03B** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-013 Date Collected: 10.29.19 12.10 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106323

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	299	49.3	mg/kg	11.04.19 14.25		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 00.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	230	50.1	mg/kg	11.02.19 00.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 00.52	U	1
Total GRO-DRO	PHC628	230	50.1	mg/kg	11.02.19 00.52		1
Total TPH	PHC635	230	50.1	mg/kg	11.02.19 00.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	11.02.19 00.52	
o-Terphenyl	84-15-1	94	%	70-135	11.02.19 00.52	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03B**
Lab Sample Id: 641798-013

Matrix: Soil
Date Collected: 10.29.19 12.10

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	11.01.19 19.40	U	1
Toluene	108-88-3	0.00348	0.000990	mg/kg	11.01.19 19.40		1
Ethylbenzene	100-41-4	0.00117	0.000990	mg/kg	11.01.19 19.40		1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.01.19 19.40	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	11.01.19 19.40	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	11.01.19 19.40	U	1
Total BTEX		0.00465	0.000990	mg/kg	11.01.19 19.40		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.01.19 19.40		
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.01.19 19.40		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03C** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-014 Date Collected: 10.29.19 12.20 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106323

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	582	504	mg/kg	11.01.19 15.16		50

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.02.19 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	68.7	49.8	mg/kg	11.02.19 01.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.02.19 01.12	U	1
Total GRO-DRO	PHC628	68.7	49.8	mg/kg	11.02.19 01.12		1
Total TPH	PHC635	68.7	49.8	mg/kg	11.02.19 01.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.02.19 01.12	
o-Terphenyl	84-15-1	105	%	70-135	11.02.19 01.12	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03C**
Lab Sample Id: 641798-014

Matrix: Soil
Date Collected: 10.29.19 12.20

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 20.01	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 20.01	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 20.01	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 20.01	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 20.01	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 20.01	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 20.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.01.19 20.01		
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.01.19 20.01		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03D**
Lab Sample Id: 641798-015

Matrix: Soil
Date Collected: 10.29.19 12.30

Date Received: 10.31.19 16.48
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	581	101	mg/kg	11.01.19 16.19		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.02.19 01.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.02.19 01.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.02.19 01.32	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.02.19 01.32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.02.19 01.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.02.19 01.32	
o-Terphenyl	84-15-1	95	%	70-135	11.02.19 01.32	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03D**
 Lab Sample Id: 641798-015

Matrix: Soil
 Date Collected: 10.29.19 12.30

Date Received: 10.31.19 16.48
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	11.01.19 20.21	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	11.01.19 20.21	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	11.01.19 20.21	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.01.19 20.21	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	11.01.19 20.21	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	11.01.19 20.21	U	1
Total BTEX		<0.000992	0.000992	mg/kg	11.01.19 20.21	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		99	%	70-130	11.01.19 20.21	
4-Bromofluorobenzene	460-00-4		113	%	70-130	11.01.19 20.21	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03E**
Lab Sample Id: 641798-016

Matrix: Soil
Date Collected: 10.29.19 12.40

Date Received: 10.31.19 16.48
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	462	50.4	mg/kg	11.04.19 14.38		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 01.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 01.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 01.52	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 01.52	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 01.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.02.19 01.52	
o-Terphenyl	84-15-1	94	%	70-135	11.02.19 01.52	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH03E**
Lab Sample Id: 641798-016

Matrix: Soil
Date Collected: 10.29.19 12.40

Date Received: 10.31.19 16.48
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.01.19 20.41	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.01.19 20.41	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.01.19 20.41	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.01.19 20.41	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.01.19 20.41	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.01.19 20.41	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.01.19 20.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.01.19 20.41		
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.01.19 20.41		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH04** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-017 Date Collected: 10.29.19 12.55 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106323

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	11.01.19 15.34	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 02.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	162	50.1	mg/kg	11.02.19 02.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 02.12	U	1
Total GRO-DRO	PHC628	162	50.1	mg/kg	11.02.19 02.12		1
Total TPH	PHC635	162	50.1	mg/kg	11.02.19 02.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	11.02.19 02.12	
o-Terphenyl	84-15-1	132	%	70-135	11.02.19 02.12	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH04**
 Lab Sample Id: 641798-017

Matrix: Soil
 Date Collected: 10.29.19 12.55

Date Received: 10.31.19 16.48
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.01.19 21.02	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.01.19 21.02	U	1
Ethylbenzene	100-41-4	0.00342	0.000998	mg/kg	11.01.19 21.02		1
m,p-Xylenes	179601-23-1	0.00293	0.00200	mg/kg	11.01.19 21.02		1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.01.19 21.02	U	1
Total Xylenes	1330-20-7	0.00293	0.000998	mg/kg	11.01.19 21.02		1
Total BTEX		0.00635	0.000998	mg/kg	11.01.19 21.02		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		104	%	70-130	11.01.19 21.02	
1,4-Difluorobenzene	540-36-3		102	%	70-130	11.01.19 21.02	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH04A**
Lab Sample Id: 641798-018

Matrix: Soil
Date Collected: 10.29.19 13.05

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	11.01.19 15.40	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 02.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	137	50.3	mg/kg	11.02.19 02.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 02.32	U	1
Total GRO-DRO	PHC628	137	50.3	mg/kg	11.02.19 02.32		1
Total TPH	PHC635	137	50.3	mg/kg	11.02.19 02.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.02.19 02.32	
o-Terphenyl	84-15-1	111	%	70-135	11.02.19 02.32	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH04A**
 Lab Sample Id: 641798-018

Matrix: Soil
 Date Collected: 10.29.19 13.05

Date Received: 10.31.19 16.48
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.01.19 21.22	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.01.19 21.22	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.01.19 21.22	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 21.22	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.01.19 21.22	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.01.19 21.22	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.01.19 21.22	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		108	%	70-130	11.01.19 21.22	
1,4-Difluorobenzene	540-36-3		103	%	70-130	11.01.19 21.22	



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LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH04B**
Lab Sample Id: 641798-019

Matrix: Soil
Date Collected: 10.29.19 13.15

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	11.04.19 14.45		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 02.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	55.2	50.2	mg/kg	11.02.19 02.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 02.52	U	1
Total GRO-DRO	PHC628	55.2	50.2	mg/kg	11.02.19 02.52		1
Total TPH	PHC635	55.2	50.2	mg/kg	11.02.19 02.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.02.19 02.52	
o-Terphenyl	84-15-1	100	%	70-135	11.02.19 02.52	



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LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH04B**
Lab Sample Id: 641798-019

Matrix: Soil
Date Collected: 10.29.19 13.15

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.01.19 21.42	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.01.19 21.42	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.01.19 21.42	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.01.19 21.42	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.01.19 21.42	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.01.19 21.42	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.01.19 21.42	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116		%	70-130	11.01.19 21.42	
1,4-Difluorobenzene	540-36-3	103		%	70-130	11.01.19 21.42	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH04C**
 Lab Sample Id: 641798-020

Matrix: Soil
 Date Collected: 10.29.19 13.25

Date Received: 10.31.19 16.48
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106323

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	11.04.19 14.51		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106230

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 03.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 03.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 03.12	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 03.12	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 03.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	11.02.19 03.12	
o-Terphenyl	84-15-1	107	%	70-135	11.02.19 03.12	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH04C**
Lab Sample Id: 641798-020

Matrix: Soil
Date Collected: 10.29.19 13.25

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 09.11

Basis: Wet Weight

Seq Number: 3106318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 22.03	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 22.03	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 22.03	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 22.03	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 22.03	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 22.03	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 22.03	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.01.19 22.03		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.01.19 22.03		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05**
Lab Sample Id: 641798-021

Matrix: Soil
Date Collected: 10.29.19 14.00

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	11.01.19 17.01	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.02.19 04.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.02.19 04.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.02.19 04.52	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.02.19 04.52	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.02.19 04.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	11.02.19 04.52	
o-Terphenyl	84-15-1	119	%	70-135	11.02.19 04.52	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05**
Lab Sample Id: 641798-021

Matrix: Soil
Date Collected: 10.29.19 14.00

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 14.24	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 14.24	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 14.24	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 14.24	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 14.24	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 14.24	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 14.24	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.01.19 14.24		
4-Bromofluorobenzene	460-00-4	109	%	70-130	11.01.19 14.24		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05A**
Lab Sample Id: 641798-022

Matrix: Soil
Date Collected: 10.29.19 14.10

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	11.01.19 17.19	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 05.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 05.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 05.51	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 05.51	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 05.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	11.02.19 05.51	
o-Terphenyl	84-15-1	124	%	70-135	11.02.19 05.51	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05A**
Lab Sample Id: 641798-022

Matrix: Soil
Date Collected: 10.29.19 14.10

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.01.19 14.43	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.01.19 14.43	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.01.19 14.43	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.01.19 14.43	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.01.19 14.43	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.01.19 14.43	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.01.19 14.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.01.19 14.43		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.01.19 14.43		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05B**
Lab Sample Id: 641798-023

Matrix: Soil
Date Collected: 10.29.19 14.20

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	112	9.96	mg/kg	11.04.19 15.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 06.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 06.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 06.11	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 06.11	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 06.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	11.02.19 06.11	
o-Terphenyl	84-15-1	116	%	70-135	11.02.19 06.11	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05B**
Lab Sample Id: 641798-023

Matrix: Soil
Date Collected: 10.29.19 14.20

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 15.02	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 15.02	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 15.02	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.01.19 15.02	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 15.02	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 15.02	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 15.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.01.19 15.02		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.01.19 15.02		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05C**
 Lab Sample Id: 641798-024

Matrix: Soil
 Date Collected: 10.29.19 14.30

Date Received: 10.31.19 16.48
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	42.9	9.92	mg/kg	11.04.19 15.16		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 06.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 06.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 06.31	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 06.31	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 06.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	210	%	70-135	11.02.19 06.31	**
o-Terphenyl	84-15-1	207	%	70-135	11.02.19 06.31	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05C**
Lab Sample Id: 641798-024

Matrix: Soil
Date Collected: 10.29.19 14.30

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.01.19 15.21	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.01.19 15.21	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.01.19 15.21	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.01.19 15.21	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.01.19 15.21	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.01.19 15.21	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.01.19 15.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.01.19 15.21		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.01.19 15.21		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05D**
Lab Sample Id: 641798-025

Matrix: Soil
Date Collected: 10.29.19 14.40

Date Received: 10.31.19 16.48
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.1	9.88	mg/kg	11.04.19 15.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.02.19 06.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.02.19 06.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.02.19 06.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.02.19 06.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.02.19 06.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.02.19 06.51	
o-Terphenyl	84-15-1	102	%	70-135	11.02.19 06.51	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH05D**
 Lab Sample Id: 641798-025

Matrix: Soil
 Date Collected: 10.29.19 14.40

Date Received: 10.31.19 16.48
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.01.19 15.40	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.01.19 15.40	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.01.19 15.40	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 15.40	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.01.19 15.40	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.01.19 15.40	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.01.19 15.40	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		128	%	70-130	11.01.19 15.40	
1,4-Difluorobenzene	540-36-3		103	%	70-130	11.01.19 15.40	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-026 Date Collected: 10.29.19 15.00 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	82.8	49.9	mg/kg	11.01.19 17.55		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106286

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 07.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 07.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 07.11	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 07.11	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 07.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.02.19 07.11	
o-Terphenyl	84-15-1	112	%	70-135	11.02.19 07.11	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06**
Lab Sample Id: 641798-026

Matrix: Soil
Date Collected: 10.29.19 15.00

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 16.00	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 16.00	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 16.00	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 16.00	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 16.00	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 16.00	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 16.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.01.19 16.00		
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.01.19 16.00		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06A** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-027 Date Collected: 10.29.19 15.10 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	837	49.8	mg/kg	11.01.19 18.01		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106286

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 07.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 07.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 07.31	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 07.31	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 07.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	165	%	70-135	11.02.19 07.31	**
o-Terphenyl	84-15-1	162	%	70-135	11.02.19 07.31	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06A**
 Lab Sample Id: 641798-027

Matrix: Soil
 Date Collected: 10.29.19 15.10

Date Received: 10.31.19 16.48
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.01.19 16.19	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.01.19 16.19	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.01.19 16.19	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.01.19 16.19	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.01.19 16.19	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.01.19 16.19	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.01.19 16.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.01.19 16.19		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.01.19 16.19		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06B**
 Lab Sample Id: 641798-028

Matrix: Soil
 Date Collected: 10.29.19 15.20

Date Received: 10.31.19 16.48
 Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	753	49.8	mg/kg	11.01.19 18.07		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.02.19 07.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.02.19 07.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.02.19 07.51	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.02.19 07.51	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.02.19 07.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.02.19 07.51	
o-Terphenyl	84-15-1	92	%	70-135	11.02.19 07.51	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06B**
 Lab Sample Id: 641798-028

Matrix: Soil
 Date Collected: 10.29.19 15.20

Date Received: 10.31.19 16.48
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 16.38	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 16.38	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 16.38	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.01.19 16.38	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 16.38	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 16.38	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 16.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.01.19 16.38		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.01.19 16.38		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06C**
 Lab Sample Id: 641798-029

Matrix: Soil
 Date Collected: 10.29.19 15.30

Date Received: 10.31.19 16.48
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1570	99.2	mg/kg	11.01.19 18.13		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 08.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 08.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 08.11	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 08.11	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 08.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.02.19 08.11	
o-Terphenyl	84-15-1	117	%	70-135	11.02.19 08.11	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06C**
Lab Sample Id: 641798-029

Matrix: Soil
Date Collected: 10.29.19 15.30

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3106339

Prep Method: SW5030B

% Moisture:

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	11.01.19 16.57	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	11.01.19 16.57	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	11.01.19 16.57	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.01.19 16.57	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	11.01.19 16.57	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	11.01.19 16.57	U	1
Total BTEX		<0.000992	0.000992	mg/kg	11.01.19 16.57	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123		%	70-130	11.01.19 16.57	
1,4-Difluorobenzene	540-36-3	103		%	70-130	11.01.19 16.57	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06D** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-030 Date Collected: 10.29.19 15.40 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2600	98.4	mg/kg	11.01.19 18.19		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106286

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 08.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 08.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 08.30	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 08.30	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 08.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.02.19 08.30	
o-Terphenyl	84-15-1	94	%	70-135	11.02.19 08.30	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06D**
 Lab Sample Id: 641798-030

Matrix: Soil
 Date Collected: 10.29.19 15.40

Date Received: 10.31.19 16.48
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.01.19 17.16	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.01.19 17.16	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.01.19 17.16	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 17.16	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.01.19 17.16	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.01.19 17.16	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.01.19 17.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.01.19 17.16		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.01.19 17.16		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06E** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-031 Date Collected: 10.29.19 15.50 Sample Depth: 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1650	99.6	mg/kg	11.01.19 18.25		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106286

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 09.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 09.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 09.10	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 09.10	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 09.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	177	%	70-135	11.02.19 09.10	**
o-Terphenyl	84-15-1	178	%	70-135	11.02.19 09.10	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06E**
 Lab Sample Id: 641798-031

Matrix: Soil
 Date Collected: 10.29.19 15.50

Date Received: 10.31.19 16.48
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 18.20	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 18.20	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 18.20	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 18.20	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 18.20	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 18.20	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 18.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.01.19 18.20		
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.01.19 18.20		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06F**
 Lab Sample Id: 641798-032

Matrix: Soil
 Date Collected: 10.29.19 10.00

Date Received: 10.31.19 16.48
 Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	958	498	mg/kg	11.01.19 18.42		50

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 09.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 09.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 09.30	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 09.30	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 09.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	11.02.19 09.30	
o-Terphenyl	84-15-1	78	%	70-135	11.02.19 09.30	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06F**
Lab Sample Id: 641798-032

Matrix: Soil
Date Collected: 10.29.19 10.00

Date Received: 10.31.19 16.48
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.01.19 18.39	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.01.19 18.39	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.01.19 18.39	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.01.19 18.39	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.01.19 18.39	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.01.19 18.39	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.01.19 18.39	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103		%	70-130	11.01.19 18.39	
4-Bromofluorobenzene	460-00-4	121		%	70-130	11.01.19 18.39	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06G** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-033 Date Collected: 10.29.19 16.10 Sample Depth: 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	758	98.8	mg/kg	11.01.19 18.48		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106286

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 09.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 09.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 09.50	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 09.50	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 09.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	11.02.19 09.50	
o-Terphenyl	84-15-1	93	%	70-135	11.02.19 09.50	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06G**
Lab Sample Id: 641798-033

Matrix: Soil
Date Collected: 10.29.19 16.10

Date Received: 10.31.19 16.48
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.01.19 18.58	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.01.19 18.58	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.01.19 18.58	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.01.19 18.58	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.01.19 18.58	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.01.19 18.58	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.01.19 18.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.01.19 18.58		
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.01.19 18.58		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06H**
Lab Sample Id: 641798-034

Matrix: Soil
Date Collected: 10.29.19 16.20

Date Received: 10.31.19 16.48
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	968	49.6	mg/kg	11.01.19 19.06		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 10.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 10.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 10.10	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 10.10	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 10.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.02.19 10.10	
o-Terphenyl	84-15-1	92	%	70-135	11.02.19 10.10	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH06H**
Lab Sample Id: 641798-034

Matrix: Soil
Date Collected: 10.29.19 16.20

Date Received: 10.31.19 16.48
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 19.18	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 19.18	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 19.18	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 19.18	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 19.18	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 19.18	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 19.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.01.19 19.18		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.01.19 19.18		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-035 Date Collected: 10.29.19 16.40 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1600	49.4	mg/kg	11.01.19 19.12		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106286

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 10.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 10.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 10.59	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 10.59	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 10.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	141	%	70-135	11.02.19 10.59	**
o-Terphenyl	84-15-1	141	%	70-135	11.02.19 10.59	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07**
Lab Sample Id: 641798-035

Matrix: Soil
Date Collected: 10.29.19 16.40

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 19.36	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 19.36	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 19.36	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 19.36	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 19.36	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 19.36	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 19.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.01.19 19.36		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.01.19 19.36		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07A** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-036 Date Collected: 10.29.19 16.50 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1130	50.0	mg/kg	11.01.19 19.18		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106286

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 11.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 11.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 11.19	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 11.19	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 11.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	133	%	70-135	11.02.19 11.19	
o-Terphenyl	84-15-1	132	%	70-135	11.02.19 11.19	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07A**
Lab Sample Id: 641798-036

Matrix: Soil
Date Collected: 10.29.19 16.50

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.01.19 19.56	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.01.19 19.56	U	1
Ethylbenzene	100-41-4	0.00258	0.00101	mg/kg	11.01.19 19.56		1
m,p-Xylenes	179601-23-1	0.00225	0.00202	mg/kg	11.01.19 19.56		1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.01.19 19.56	U	1
Total Xylenes	1330-20-7	0.00225	0.00101	mg/kg	11.01.19 19.56		1
Total BTEX		0.00483	0.00101	mg/kg	11.01.19 19.56		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.01.19 19.56		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.01.19 19.56		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07B** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-037 Date Collected: 10.29.19 17.00 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	236	10.0	mg/kg	11.01.19 19.24		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106286

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.02.19 11.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.02.19 11.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.02.19 11.39	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.02.19 11.39	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.02.19 11.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.02.19 11.39	
o-Terphenyl	84-15-1	120	%	70-135	11.02.19 11.39	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07B**
 Lab Sample Id: 641798-037

Matrix: Soil
 Date Collected: 10.29.19 17.00

Date Received: 10.31.19 16.48
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	11.01.19 20.15	U	1
Toluene	108-88-3	0.00408	0.000992	mg/kg	11.01.19 20.15		1
Ethylbenzene	100-41-4	0.00129	0.000992	mg/kg	11.01.19 20.15		1
m,p-Xylenes	179601-23-1	0.00236	0.00198	mg/kg	11.01.19 20.15		1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	11.01.19 20.15	U	1
Total Xylenes	1330-20-7	0.00236	0.000992	mg/kg	11.01.19 20.15		1
Total BTEX		0.00773	0.000992	mg/kg	11.01.19 20.15		1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		117	%	70-130	11.01.19 20.15	
1,4-Difluorobenzene	540-36-3		105	%	70-130	11.01.19 20.15	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07C** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-038 Date Collected: 10.29.19 17.10 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.01.19 10.11 Basis: Wet Weight
 Seq Number: 3106324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	730	20.2	mg/kg	11.01.19 19.30		2

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106286

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.02.19 11.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.02.19 11.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.02.19 11.59	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.02.19 11.59	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.02.19 11.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.02.19 11.59	
o-Terphenyl	84-15-1	123	%	70-135	11.02.19 11.59	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07C**
Lab Sample Id: 641798-038

Matrix: Soil
Date Collected: 10.29.19 17.10

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.01.19 20.34	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.01.19 20.34	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.01.19 20.34	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 20.34	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.01.19 20.34	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.01.19 20.34	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.01.19 20.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.01.19 20.34		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.01.19 20.34		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07D**
 Lab Sample Id: 641798-039

Matrix: Soil
 Date Collected: 10.29.19 17.20

Date Received: 10.31.19 16.48
 Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	214	10.0	mg/kg	11.01.19 19.36		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 12.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 12.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 12.19	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 12.19	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 12.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.02.19 12.19	
o-Terphenyl	84-15-1	121	%	70-135	11.02.19 12.19	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07D**
Lab Sample Id: 641798-039

Matrix: Soil
Date Collected: 10.29.19 17.20

Date Received: 10.31.19 16.48
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.01.19 20.53	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.01.19 20.53	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.01.19 20.53	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.01.19 20.53	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.01.19 20.53	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.01.19 20.53	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.01.19 20.53	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119		%	70-130	11.01.19 20.53	
1,4-Difluorobenzene	540-36-3	104		%	70-130	11.01.19 20.53	



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LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07E**
 Lab Sample Id: 641798-040

Matrix: Soil
 Date Collected: 10.29.19 17.30

Date Received: 10.31.19 16.48
 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3106324

Date Prep: 11.01.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.7	9.96	mg/kg	11.01.19 19.42		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106286

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 12.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 12.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 12.39	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 12.39	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 12.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.02.19 12.39	
o-Terphenyl	84-15-1	108	%	70-135	11.02.19 12.39	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH07E**
 Lab Sample Id: 641798-040

Matrix: Soil
 Date Collected: 10.29.19 17.30

Date Received: 10.31.19 16.48
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 10.11

Basis: Wet Weight

Seq Number: 3106339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.01.19 21.12	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.01.19 21.12	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.01.19 21.12	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.01.19 21.12	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.01.19 21.12	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.01.19 21.12	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.01.19 21.12	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		103	%	70-130	11.01.19 21.12	
4-Bromofluorobenzene	460-00-4		123	%	70-130	11.01.19 21.12	



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LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-041 Date Collected: 10.30.19 09.10 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MRB Date Prep: 11.04.19 10.11 Basis: Wet Weight
 Seq Number: 3106388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1330	99.8	mg/kg	11.04.19 11.05		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 06.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 06.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 06.31	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 06.31	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 06.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	11.02.19 06.31	
o-Terphenyl	84-15-1	130	%	70-135	11.02.19 06.31	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08**
Lab Sample Id: 641798-041

Matrix: Soil
Date Collected: 10.30.19 09.10

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3106340

Prep Method: SW5030B

% Moisture:

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.02.19 00.17	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.02.19 00.17	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.02.19 00.17	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 00.17	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.02.19 00.17	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.02.19 00.17	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.02.19 00.17	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111		%	70-130	11.02.19 00.17	
1,4-Difluorobenzene	540-36-3	100		%	70-130	11.02.19 00.17	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08A** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-042 Date Collected: 10.30.19 09.20 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MRB Date Prep: 11.04.19 10.11 Basis: Wet Weight
 Seq Number: 3106388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	551	50.4	mg/kg	11.04.19 11.23		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.02.19 06.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.02.19 06.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.02.19 06.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.02.19 06.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.02.19 06.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	11.02.19 06.51	
o-Terphenyl	84-15-1	130	%	70-135	11.02.19 06.51	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08A**
Lab Sample Id: 641798-042

Matrix: Soil
Date Collected: 10.30.19 09.20

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.02.19 00.37	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.02.19 00.37	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.02.19 00.37	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.02.19 00.37	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.02.19 00.37	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.02.19 00.37	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.02.19 00.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.02.19 00.37		
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.02.19 00.37		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08B** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-043 Date Collected: 10.30.19 09.30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MRB Date Prep: 11.04.19 10.11 Basis: Wet Weight
 Seq Number: 3106388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	498	50.3	mg/kg	11.04.19 11.29		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 07.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 07.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 07.11	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 07.11	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 07.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.02.19 07.11	
o-Terphenyl	84-15-1	114	%	70-135	11.02.19 07.11	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08B**
 Lab Sample Id: 641798-043

Matrix: Soil
 Date Collected: 10.30.19 09.30

Date Received: 10.31.19 16.48
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.02.19 00.56	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.02.19 00.56	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.02.19 00.56	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 00.56	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.02.19 00.56	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.02.19 00.56	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.02.19 00.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.02.19 00.56		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.02.19 00.56		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08C**
Lab Sample Id: 641798-044

Matrix: Soil
Date Collected: 10.30.19 09.40

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MRB

Seq Number: 3106388

Date Prep: 11.04.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	78.3	10.0	mg/kg	11.04.19 11.35		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106309

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.02.19 07.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.02.19 07.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.02.19 07.31	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.02.19 07.31	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.02.19 07.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	138	%	70-135	11.02.19 07.31	**
o-Terphenyl	84-15-1	142	%	70-135	11.02.19 07.31	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08C**
Lab Sample Id: 641798-044

Matrix: Soil
Date Collected: 10.30.19 09.40

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.02.19 01.15	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.02.19 01.15	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.02.19 01.15	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.02.19 01.15	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.02.19 01.15	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.02.19 01.15	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.02.19 01.15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.02.19 01.15		
4-Bromofluorobenzene	460-00-4	127	%	70-130	11.02.19 01.15		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08D** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-045 Date Collected: 10.30.19 09.50 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MRB Date Prep: 11.04.19 10.11 Basis: Wet Weight
 Seq Number: 3106388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	36.2	9.82	mg/kg	11.04.19 12.25		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.02.19 07.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.02.19 07.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.02.19 07.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.02.19 07.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.02.19 07.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.02.19 07.51	
o-Terphenyl	84-15-1	114	%	70-135	11.02.19 07.51	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08D**
Lab Sample Id: 641798-045

Matrix: Soil
Date Collected: 10.30.19 09.50

Date Received: 10.31.19 16.48
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.02.19 01.34	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.02.19 01.34	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.02.19 01.34	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.02.19 01.34	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.02.19 01.34	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.02.19 01.34	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.02.19 01.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.02.19 01.34		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.02.19 01.34		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08E** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-046 Date Collected: 10.30.19 10.00 Sample Depth: 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MRB Date Prep: 11.04.19 10.11 Basis: Wet Weight
 Seq Number: 3106388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	352	9.96	mg/kg	11.04.19 12.43		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 08.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 08.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 08.11	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 08.11	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 08.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.02.19 08.11	
o-Terphenyl	84-15-1	108	%	70-135	11.02.19 08.11	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH08E**
Lab Sample Id: 641798-046

Matrix: Soil
Date Collected: 10.30.19 10.00

Date Received: 10.31.19 16.48
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.02.19 01.53	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.02.19 01.53	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.02.19 01.53	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.02.19 01.53	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.02.19 01.53	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.02.19 01.53	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.02.19 01.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.02.19 01.53		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.02.19 01.53		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH09**
Lab Sample Id: 641798-047

Matrix: Soil
Date Collected: 10.30.19 10.20

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MRB

Seq Number: 3106388

Date Prep: 11.04.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	98.6	mg/kg	11.04.19 12.49		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106309

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 08.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 08.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 08.30	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 08.30	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 08.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	11.02.19 08.30	
o-Terphenyl	84-15-1	105	%	70-135	11.02.19 08.30	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH09**
 Lab Sample Id: 641798-047

Matrix: Soil
 Date Collected: 10.30.19 10.20

Date Received: 10.31.19 16.48
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3106340

Prep Method: SW5030B

% Moisture:

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	11.02.19 02.12	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	11.02.19 02.12	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	11.02.19 02.12	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.02.19 02.12	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	11.02.19 02.12	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	11.02.19 02.12	U	1
Total BTEX		<0.000990	0.000990	mg/kg	11.02.19 02.12	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		123	%	70-130	11.02.19 02.12	
1,4-Difluorobenzene	540-36-3		103	%	70-130	11.02.19 02.12	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH09A** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-048 Date Collected: 10.30.19 10.30 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MRB Date Prep: 11.04.19 10.11 Basis: Wet Weight
 Seq Number: 3106388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	569	99.6	mg/kg	11.04.19 12.55		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 08.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 08.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 08.50	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 08.50	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 08.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	142	%	70-135	11.02.19 08.50	**
o-Terphenyl	84-15-1	146	%	70-135	11.02.19 08.50	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH09A**
Lab Sample Id: 641798-048

Matrix: Soil
Date Collected: 10.30.19 10.30

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.02.19 02.31	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.02.19 02.31	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.02.19 02.31	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 02.31	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.02.19 02.31	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.02.19 02.31	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.02.19 02.31	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		103	%	70-130	11.02.19 02.31	
4-Bromofluorobenzene	460-00-4		122	%	70-130	11.02.19 02.31	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH09B**
Lab Sample Id: 641798-049

Matrix: Soil
Date Collected: 10.30.19 10.40

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MRB

Seq Number: 3106388

Date Prep: 11.04.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	716	494	mg/kg	11.04.19 13.01		50

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106309

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 09.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 09.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 09.30	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 09.30	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 09.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.02.19 09.30	
o-Terphenyl	84-15-1	105	%	70-135	11.02.19 09.30	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH09B**
 Lab Sample Id: 641798-049

Matrix: Soil
 Date Collected: 10.30.19 10.40

Date Received: 10.31.19 16.48
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.02.19 02.50	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.02.19 02.50	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.02.19 02.50	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.02.19 02.50	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.02.19 02.50	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.02.19 02.50	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.02.19 02.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.02.19 02.50		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.02.19 02.50		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH10**
Lab Sample Id: 641798-050

Matrix: Soil
Date Collected: 10.30.19 11.00

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MRB

Seq Number: 3106388

Date Prep: 11.04.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2220	200	mg/kg	11.04.19 13.07		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106309

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 09.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 09.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 09.50	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 09.50	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 09.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	152	%	70-135	11.02.19 09.50	**
o-Terphenyl	84-15-1	158	%	70-135	11.02.19 09.50	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH10**
Lab Sample Id: 641798-050

Matrix: Soil
Date Collected: 10.30.19 11.00

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.02.19 03.10	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.02.19 03.10	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.02.19 03.10	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 03.10	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.02.19 03.10	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.02.19 03.10	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.02.19 03.10	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		101	%	70-130	11.02.19 03.10	
4-Bromofluorobenzene	460-00-4		113	%	70-130	11.02.19 03.10	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH10A**
Lab Sample Id: 641798-051

Matrix: Soil
Date Collected: 10.30.19 11.10

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MRB

Seq Number: 3106388

Date Prep: 11.04.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1170	503	mg/kg	11.04.19 13.13		50

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106309

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 10.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 10.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 10.10	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 10.10	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 10.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	162	%	70-135	11.02.19 10.10	**
o-Terphenyl	84-15-1	164	%	70-135	11.02.19 10.10	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH10A**
Lab Sample Id: 641798-051

Matrix: Soil
Date Collected: 10.30.19 11.10

Date Received: 10.31.19 16.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.02.19 04.13	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.02.19 04.13	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.02.19 04.13	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 04.13	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.02.19 04.13	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.02.19 04.13	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.02.19 04.13	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.02.19 04.13		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.02.19 04.13		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH10B**
Lab Sample Id: 641798-052

Matrix: Soil
Date Collected: 10.30.19 11.20

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MRB

Seq Number: 3106388

Date Prep: 11.04.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	705	199	mg/kg	11.04.19 13.31		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106309

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.02.19 10.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.02.19 10.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.02.19 10.59	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.02.19 10.59	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.02.19 10.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	173	%	70-135	11.02.19 10.59	**
o-Terphenyl	84-15-1	181	%	70-135	11.02.19 10.59	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH10B**
Lab Sample Id: 641798-052

Matrix: Soil
Date Collected: 10.30.19 11.20

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3106340

Prep Method: SW5030B

% Moisture:

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.02.19 04.32	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.02.19 04.32	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.02.19 04.32	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 04.32	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.02.19 04.32	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.02.19 04.32	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.02.19 04.32	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122		%	70-130	11.02.19 04.32	
1,4-Difluorobenzene	540-36-3	104		%	70-130	11.02.19 04.32	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH10C** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-053 Date Collected: 10.30.19 11.30 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MRB Date Prep: 11.04.19 10.11 Basis: Wet Weight
 Seq Number: 3106388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<497	497	mg/kg	11.04.19 13.37	U	50

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.02.19 11.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.02.19 11.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.02.19 11.19	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.02.19 11.19	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.02.19 11.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	135	%	70-135	11.02.19 11.19	
o-Terphenyl	84-15-1	135	%	70-135	11.02.19 11.19	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH10C**
Lab Sample Id: 641798-053

Matrix: Soil
Date Collected: 10.30.19 11.30

Date Received: 10.31.19 16.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.02.19 04.52	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.02.19 04.52	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.02.19 04.52	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 04.52	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.02.19 04.52	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.02.19 04.52	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.02.19 04.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	11.02.19 04.52		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.02.19 04.52		



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH11** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-054 Date Collected: 10.30.19 13.10 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MRB Date Prep: 11.04.19 10.11 Basis: Wet Weight
 Seq Number: 3106388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7490	498	mg/kg	11.04.19 13.54		50

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.02.19 11.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.02.19 11.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.02.19 11.39	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.02.19 11.39	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.02.19 11.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	163	%	70-135	11.02.19 11.39	**
o-Terphenyl	84-15-1	161	%	70-135	11.02.19 11.39	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH11**
Lab Sample Id: 641798-054

Matrix: Soil
Date Collected: 10.30.19 13.10

Date Received: 10.31.19 16.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.02.19 05.11	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.02.19 05.11	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.02.19 05.11	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.02.19 05.11	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.02.19 05.11	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.02.19 05.11	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.02.19 05.11	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		101	%	70-130	11.02.19 05.11	
4-Bromofluorobenzene	460-00-4		115	%	70-130	11.02.19 05.11	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH11A** Matrix: Soil Date Received: 10.31.19 16.48
 Lab Sample Id: 641798-055 Date Collected: 10.30.19 13.20 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MRB Date Prep: 11.04.19 10.11 Basis: Wet Weight
 Seq Number: 3106388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1360	499	mg/kg	11.04.19 14.00		50

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.01.19 16.00 Basis: Wet Weight
 Seq Number: 3106309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.02.19 11.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.02.19 11.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.02.19 11.59	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.02.19 11.59	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.02.19 11.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	153	%	70-135	11.02.19 11.59	**
o-Terphenyl	84-15-1	156	%	70-135	11.02.19 11.59	**



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH11A**
 Lab Sample Id: 641798-055

Matrix: Soil
 Date Collected: 10.30.19 13.20

Date Received: 10.31.19 16.48
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3106340

Prep Method: SW5030B

% Moisture:

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000988	0.000988	mg/kg	11.02.19 05.30	U	1
Toluene	108-88-3	<0.000988	0.000988	mg/kg	11.02.19 05.30	U	1
Ethylbenzene	100-41-4	<0.000988	0.000988	mg/kg	11.02.19 05.30	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.02.19 05.30	U	1
o-Xylene	95-47-6	<0.000988	0.000988	mg/kg	11.02.19 05.30	U	1
Total Xylenes	1330-20-7	<0.000988	0.000988	mg/kg	11.02.19 05.30	U	1
Total BTEX		<0.000988	0.000988	mg/kg	11.02.19 05.30	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119		%	70-130	11.02.19 05.30	
1,4-Difluorobenzene	540-36-3	104		%	70-130	11.02.19 05.30	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH11B**
 Lab Sample Id: 641798-056

Matrix: Soil
 Date Collected: 10.30.19 13.30

Date Received: 10.31.19 16.48
 Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MRB

Seq Number: 3106388

Date Prep: 11.04.19 10.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<498	498	mg/kg	11.04.19 14.06	U	50

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106309

Date Prep: 11.01.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.02.19 12.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.02.19 12.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.02.19 12.19	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.02.19 12.19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.02.19 12.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.02.19 12.19	
o-Terphenyl	84-15-1	123	%	70-135	11.02.19 12.19	



Certificate of Analytical Results 641798

LT Environmental, Inc., Arvada, CO

Remuda State Basin #2

Sample Id: **PH11B**
Lab Sample Id: 641798-056

Matrix: Soil
Date Collected: 10.30.19 13.30

Date Received: 10.31.19 16.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.01.19 15.11

Basis: Wet Weight

Seq Number: 3106340

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000988	0.000988	mg/kg	11.02.19 05.49	U	1
Toluene	108-88-3	<0.000988	0.000988	mg/kg	11.02.19 05.49	U	1
Ethylbenzene	100-41-4	<0.000988	0.000988	mg/kg	11.02.19 05.49	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.02.19 05.49	U	1
o-Xylene	95-47-6	<0.000988	0.000988	mg/kg	11.02.19 05.49	U	1
Total Xylenes	1330-20-7	<0.000988	0.000988	mg/kg	11.02.19 05.49	U	1
Total BTEX		<0.000988	0.000988	mg/kg	11.02.19 05.49	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121		%	70-130	11.02.19 05.49	
1,4-Difluorobenzene	540-36-3	102		%	70-130	11.02.19 05.49	



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda State Basin #2

Analytical Method: Chloride by EPA 300

Seq Number: 3106323

MB Sample Id: 7689382-1-BLK

Matrix: Solid

LCS Sample Id: 7689382-1-BKS

Prep Method: E300P

Date Prep: 11.01.19

LCSD Sample Id: 7689382-1-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	264	106	264	106	90-110	0	20	mg/kg	11.01.19 12:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3106324

MB Sample Id: 7689384-1-BLK

Matrix: Solid

LCS Sample Id: 7689384-1-BKS

Prep Method: E300P

Date Prep: 11.01.19

LCSD Sample Id: 7689384-1-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	263	105	264	106	90-110	0	20	mg/kg	11.01.19 16:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3106388

MB Sample Id: 7689386-1-BLK

Matrix: Solid

LCS Sample Id: 7689386-1-BKS

Prep Method: E300P

Date Prep: 11.04.19

LCSD Sample Id: 7689386-1-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	260	104	261	104	90-110	0	20	mg/kg	11.04.19 10:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3106323

Parent Sample Id: 641798-001

Matrix: Soil

MS Sample Id: 641798-001 S

Prep Method: E300P

Date Prep: 11.01.19

MSD Sample Id: 641798-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	778	1250	2060	103	2090	104	90-110	1	20	mg/kg	11.01.19 12:41	

Analytical Method: Chloride by EPA 300

Seq Number: 3106323

Parent Sample Id: 641798-011

Matrix: Soil

MS Sample Id: 641798-011 S

Prep Method: E300P

Date Prep: 11.01.19

MSD Sample Id: 641798-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	709	1250	2020	105	1980	102	90-110	2	20	mg/kg	11.01.19 14:31	

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.

Remuda State Basin #2

Analytical Method: Chloride by EPA 300

Seq Number: 3106324

Parent Sample Id: 641798-021

Matrix: Soil

MS Sample Id: 641798-021 S

Prep Method: E300P

Date Prep: 11.01.19

MSD Sample Id: 641798-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.27	198	229	111	230	112	90-110	0	20	mg/kg	11.01.19 17:07	X

Analytical Method: Chloride by EPA 300

Seq Number: 3106324

Parent Sample Id: 641798-031

Matrix: Soil

MS Sample Id: 641798-031 S

Prep Method: E300P

Date Prep: 11.01.19

MSD Sample Id: 641798-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1650	2000	4380	137	4210	129	90-110	4	20	mg/kg	11.01.19 18:31	X

Analytical Method: Chloride by EPA 300

Seq Number: 3106388

Parent Sample Id: 641798-041

Matrix: Soil

MS Sample Id: 641798-041 S

Prep Method: E300P

Date Prep: 11.04.19

MSD Sample Id: 641798-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1330	1990	3710	120	3770	121	90-110	2	20	mg/kg	11.04.19 11:11	X

Analytical Method: Chloride by EPA 300

Seq Number: 3106388

Parent Sample Id: 641798-051

Matrix: Soil

MS Sample Id: 641798-051 S

Prep Method: E300P

Date Prep: 11.04.19

MSD Sample Id: 641798-051 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1170	10100	12000	107	12000	108	90-110	0	20	mg/kg	11.04.19 13:19	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106230

MB Sample Id: 7689453-1-BLK

Matrix: Solid

LCS Sample Id: 7689453-1-BKS

Prep Method: SW8015P

Date Prep: 11.01.19

LCSD Sample Id: 7689453-1-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	952	95	929	93	70-135	2	35	mg/kg	11.01.19 17:16	
Diesel Range Organics (DRO)	<50.0	1000	985	99	959	96	70-135	3	35	mg/kg	11.01.19 17:16	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		114		107		70-135	%	11.01.19 17:16
o-Terphenyl	112		112		98		70-135	%	11.01.19 17:16

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

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

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.

Remuda State Basin #2

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106286

MB Sample Id: 7689492-1-BLK

Matrix: Solid

LCS Sample Id: 7689492-1-BKS

Prep Method: SW8015P

Date Prep: 11.01.19

LCSD Sample Id: 7689492-1-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	924	92	867	87	70-135	6	35	mg/kg	11.02.19 04:12	
Diesel Range Organics (DRO)	<50.0	1000	922	92	877	88	70-135	5	35	mg/kg	11.02.19 04:12	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	115		112		99		70-135	%	11.02.19 04:12			
o-Terphenyl	117		101		91		70-135	%	11.02.19 04:12			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106309

MB Sample Id: 7689504-1-BLK

Matrix: Solid

LCS Sample Id: 7689504-1-BKS

Prep Method: SW8015P

Date Prep: 11.01.19

LCSD Sample Id: 7689504-1-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	870	87	887	89	70-135	2	35	mg/kg	11.02.19 04:32	
Diesel Range Organics (DRO)	<50.0	1000	917	92	931	93	70-135	2	35	mg/kg	11.02.19 04:32	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	106		107		104		70-135	%	11.02.19 04:32			
o-Terphenyl	104		99		101		70-135	%	11.02.19 04:32			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106230

Matrix: Solid

MB Sample Id: 7689453-1-BLK

Prep Method: SW8015P

Date Prep: 11.01.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.01.19 16:57	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106286

Matrix: Solid

MB Sample Id: 7689492-1-BLK

Prep Method: SW8015P

Date Prep: 11.01.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.02.19 03:52	

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

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

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.

Remuda State Basin #2

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106309

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.01.19

MB Sample Id: 7689504-1-BLK

Parameter

MB
Result

Units

Analysis
Date

Flag

Motor Oil Range Hydrocarbons (MRO)

<50.0

mg/kg

11.02.19 04:12

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106230

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.01.19

Parent Sample Id: 641798-001

MS Sample Id: 641798-001 S

MSD Sample Id: 641798-001 SD

Parameter

Parent
ResultSpike
AmountMS
ResultMS
%RecMSD
ResultMSD
%Rec

Limits

%RPD

RPD Limit

Units

Analysis
Date

Flag

Gasoline Range Hydrocarbons (GRO)

<50.3

1010

915

91

920

91

70-135

1

35

mg/kg

11.01.19 18:16

Diesel Range Organics (DRO)

<50.3

1010

932

92

946

94

70-135

1

35

mg/kg

11.01.19 18:16

Surrogate

MS
%RecMS
FlagMSD
%RecMSD
Flag

Limits

Units

Analysis
Date

1-Chlorooctane

102

89

70-135

%

11.01.19 18:16

o-Terphenyl

92

79

70-135

%

11.01.19 18:16

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106286

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.01.19

Parent Sample Id: 641798-021

MS Sample Id: 641798-021 S

MSD Sample Id: 641798-021 SD

Parameter

Parent
ResultSpike
AmountMS
ResultMS
%RecMSD
ResultMSD
%Rec

Limits

%RPD

RPD Limit

Units

Analysis
Date

Flag

Gasoline Range Hydrocarbons (GRO)

<50.2

1000

1080

108

995

99

70-135

8

35

mg/kg

11.02.19 05:12

Diesel Range Organics (DRO)

<50.2

1000

1070

107

991

98

70-135

8

35

mg/kg

11.02.19 05:12

Surrogate

MS
%RecMS
FlagMSD
%RecMSD
Flag

Limits

Units

Analysis
Date

1-Chlorooctane

128

118

70-135

%

11.02.19 05:12

o-Terphenyl

114

107

70-135

%

11.02.19 05:12

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106309

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.01.19

Parent Sample Id: 641879-014

MS Sample Id: 641879-014 S

MSD Sample Id: 641879-014 SD

Parameter

Parent
ResultSpike
AmountMS
ResultMS
%RecMSD
ResultMSD
%Rec

Limits

%RPD

RPD Limit

Units

Analysis
Date

Flag

Gasoline Range Hydrocarbons (GRO)

<50.3

1010

946

94

965

97

70-135

2

35

mg/kg

11.04.19 09:24

Diesel Range Organics (DRO)

<50.3

1010

1230

122

1100

110

70-135

11

35

mg/kg

11.04.19 09:24

Surrogate

MS
%RecMS
FlagMSD
%RecMSD
Flag

Limits

Units

Analysis
Date

1-Chlorooctane

112

116

70-135

%

11.04.19 09:24

o-Terphenyl

107

109

70-135

%

11.04.19 09:24

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.

Remuda State Basin #2

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106318

MB Sample Id: 7689521-1-BLK

Matrix: Solid

LCS Sample Id: 7689521-1-BKS

Prep Method: SW5030B

Date Prep: 11.01.19

LCSD Sample Id: 7689521-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.100	100	0.101	101	70-130	1	35	mg/kg	11.01.19 12:22	
Toluene	<0.00100	0.100	0.101	101	0.101	101	70-130	0	35	mg/kg	11.01.19 12:22	
Ethylbenzene	<0.00100	0.100	0.105	105	0.105	105	71-129	0	35	mg/kg	11.01.19 12:22	
m,p-Xylenes	<0.00200	0.200	0.213	107	0.215	108	70-135	1	35	mg/kg	11.01.19 12:22	
o-Xylene	<0.00100	0.100	0.105	105	0.107	107	71-133	2	35	mg/kg	11.01.19 12:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		101		102		70-130	%	11.01.19 12:22
4-Bromofluorobenzene	108		107		114		70-130	%	11.01.19 12:22

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106339

MB Sample Id: 7689533-1-BLK

Matrix: Solid

LCS Sample Id: 7689533-1-BKS

Prep Method: SW5030B

Date Prep: 11.01.19

LCSD Sample Id: 7689533-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0974	97	0.0971	97	70-130	0	35	mg/kg	11.01.19 12:42	
Toluene	<0.00100	0.100	0.0973	97	0.0973	97	70-130	0	35	mg/kg	11.01.19 12:42	
Ethylbenzene	<0.00100	0.100	0.0970	97	0.0973	97	71-129	0	35	mg/kg	11.01.19 12:42	
m,p-Xylenes	<0.00200	0.200	0.208	104	0.209	105	70-135	0	35	mg/kg	11.01.19 12:42	
o-Xylene	<0.00100	0.100	0.104	104	0.104	104	71-133	0	35	mg/kg	11.01.19 12:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		101		101		70-130	%	11.01.19 12:42
4-Bromofluorobenzene	108		115		111		70-130	%	11.01.19 12:42

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106340

MB Sample Id: 7689538-1-BLK

Matrix: Solid

LCS Sample Id: 7689538-1-BKS

Prep Method: SW5030B

Date Prep: 11.01.19

LCSD Sample Id: 7689538-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0974	97	0.0883	88	70-130	10	35	mg/kg	11.01.19 22:35	
Toluene	<0.00100	0.100	0.0970	97	0.0892	89	70-130	8	35	mg/kg	11.01.19 22:35	
Ethylbenzene	<0.00100	0.100	0.0961	96	0.0886	89	71-129	8	35	mg/kg	11.01.19 22:35	
m,p-Xylenes	<0.00200	0.200	0.205	103	0.190	95	70-135	8	35	mg/kg	11.01.19 22:35	
o-Xylene	<0.00100	0.100	0.105	105	0.0970	97	71-133	8	35	mg/kg	11.01.19 22:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		102		99		70-130	%	11.01.19 22:35
4-Bromofluorobenzene	112		114		116		70-130	%	11.01.19 22:35

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.

Remuda State Basin #2

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106318

Parent Sample Id: 641798-001

Matrix: Soil

MS Sample Id: 641798-001 S

Prep Method: SW5030B

Date Prep: 11.01.19

MSD Sample Id: 641798-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0942	94	0.0513	51	70-130	59	35	mg/kg	11.01.19 13:03	XF
Toluene	<0.00100	0.100	0.0946	95	0.0498	49	70-130	62	35	mg/kg	11.01.19 13:03	XF
Ethylbenzene	<0.00100	0.100	0.0970	97	0.0484	48	71-129	67	35	mg/kg	11.01.19 13:03	XF
m,p-Xylenes	<0.00200	0.200	0.197	99	0.0976	49	70-135	67	35	mg/kg	11.01.19 13:03	XF
o-Xylene	<0.00100	0.100	0.0988	99	0.0488	48	71-133	68	35	mg/kg	11.01.19 13:03	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		101		70-130	%	11.01.19 13:03
4-Bromofluorobenzene	119		113		70-130	%	11.01.19 13:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106339

Parent Sample Id: 641798-021

Matrix: Soil

MS Sample Id: 641798-021 S

Prep Method: SW5030B

Date Prep: 11.01.19

MSD Sample Id: 641798-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000986	0.0986	0.0883	90	0.0908	92	70-130	3	35	mg/kg	11.01.19 13:20	
Toluene	<0.000986	0.0986	0.0871	88	0.0886	90	70-130	2	35	mg/kg	11.01.19 13:20	
Ethylbenzene	<0.000986	0.0986	0.0830	84	0.0855	87	71-129	3	35	mg/kg	11.01.19 13:20	
m,p-Xylenes	<0.00197	0.197	0.176	89	0.181	92	70-135	3	35	mg/kg	11.01.19 13:20	
o-Xylene	<0.000986	0.0986	0.0891	90	0.0918	93	71-133	3	35	mg/kg	11.01.19 13:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		70-130	%	11.01.19 13:20
4-Bromofluorobenzene	114		112		70-130	%	11.01.19 13:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106340

Parent Sample Id: 641798-041

Matrix: Soil

MS Sample Id: 641798-041 S

Prep Method: SW5030B

Date Prep: 11.01.19

MSD Sample Id: 641798-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000988	0.0988	0.0724	73	0.0649	65	70-130	11	35	mg/kg	11.01.19 23:14	X
Toluene	<0.000988	0.0988	0.0716	72	0.0645	65	70-130	10	35	mg/kg	11.01.19 23:14	X
Ethylbenzene	<0.000988	0.0988	0.0684	69	0.0623	62	71-129	9	35	mg/kg	11.01.19 23:14	X
m,p-Xylenes	<0.00198	0.198	0.145	73	0.131	66	70-135	10	35	mg/kg	11.01.19 23:14	X
o-Xylene	<0.000988	0.0988	0.0735	74	0.0677	68	71-133	8	35	mg/kg	11.01.19 23:14	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		70-130	%	11.01.19 23:14
4-Bromofluorobenzene	118		120		70-130	%	11.01.19 23:14

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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: 64798

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:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com

Project Name:	Reynolds State Basin #2	Turn Around	
Project Number:	28P-1534/4585	Routine	✓
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
	Temperature (°C):	0.6	Thermometer ID	
	Received Intact:	Yes ☒ No ☐	Correction Factor:	T-PH-007 -0.2
	Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	54
	Sample Custody Seals:	Yes ☒ No ☐		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST										Work Order Notes					
PH01	S	10/21/2019	1000	1	1	X	X	X																
PH01A			1010	2																				
PH01B			1020	3																				
PH01C			1030	4																				
PH01D			1045	1																				
PH01E			1055	2																				
PH01F			1105	3																				
PH01G			1115	4																				
PH01H			1125	5																				
PH01I			1135	6																				
															Sample Comments									

lab, if received by 4:30pm

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed 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
 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

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>	10/31/19 16:40	<i>[Signature]</i>	<i>[Signature]</i>	10/31/19 16:48



Chain of Custody

Work Order No: 641798

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 (575-382-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

www.xenco.com Page 2 of 6

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com

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

ANALYSIS REQUEST

Work Order Notes

Project Name:	Leavelle State Basin #2	Turn Around	
Project Number:	22P-1534 / 4585	Rush:	
P.O. Number:		Due Date:	
Sampler's Name:	Spencer Lo		

Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
1	X	X	X

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

Sample Comments

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
P103	S	10/4/19	1150	1
P103A			1200	2
P103B			1210	3
P103C			1220	4
P103D			1230	5
P103E			1240	6
P104			1255	1
P104A			1305	2
P104B			1315	3
P104C			1325	4

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

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.

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Work Order No: 041798

Page _____ of _____

Work Order Comments	
Program: UST/PST	☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:	
Reporting: Level II	☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD	☐ ADAPT ☐ Other: ☐

Project Name:		Turn Around		ANALYSIS REQUEST										Work Order Notes	
Project Number:		Routine													
P.O. Number:		Rush:													
Sampler's Name:		Due Date:													
SAMPLE RECEIPT		Temp Blank:		Yes		No		Well Ice:		Yes		No			
Temperature (°C):															
Received Intact:		Yes		No				Thermometer ID							
Cooler Custody Seals:		Yes		No				Correction Factor:							
Sample Custody Seals:		Yes		No				Total Containers:							
Sample Identification		Matrix		Date Sampled		Time Sampled		Depth		Number of Containers					
PH05A		S		10-29-19		1400		1		1					
PH05B						1410		2		X					
PH05C						1420		3		A					
PH05D						1430		4							
PH06						1440		5		A					
PH06A						1500		1							
PH06B						1510		2							
PH06C						1520		3							
PH06D						1530		4							
PH06E						1540		5							
Total 200.7 / 6010		200.8 / 6020:													
Circle Method(s) and Metal(s) to be analyzed		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											
		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													
Relinquished by: (Signature)		Received by: (Signature)		Date/Time		Relinquished by: (Signature)		Received by: (Signature)		Date/Time					
1		10/31/19		1640		2		10/31/19		1648					
3						4									
5						6									



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Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix AZ (480) 355-0000 Alhambra, CA (714) 445-0000
Jobbs NM (575) 392-7550

Chain of Custody

Work Order No. 1141798

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slo@ltenv.com , dmoir@ltenv.com

Work Order Comments									
Program: UST/PST ☐ RRP ☐ Brownfields ☐ RRC ☐ Superfund ☐ State of Project:									
Reporting: Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐									
Deliverables: EDD ☐ ADAPT ☐ Other:									

Project Name:	Remuda State Basin #2	Turn Around
Project Number:	22P-1534/4585	Routine ☒
P.O. Number:		Rush:
Sampler's Name:	Spencer Lo	Due Date:

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature ('C.):							
Received Infract:		Yes	No	Thermometer ID			
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:			
Sample Custody Seals:	Yes	No	N/A	Total Containers:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
PH06E	}	16-24-19	1550	6
PH06F			1600	7
PH06G			1610	8
PH06H			1620	9
PH07			1640	1
PH07A			1650	2
PH07B	}	1700	3	
PH07C			1710	4
PH07D			1720	5
PH07E			1730	6

[illegible]

Total	200.7 / 6010	200.8 / 6020:
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[illegible]

Circle Method(s) and Metal(s) to be analyzed

TCLP/SPLP 6010: 8BCBA Sh As Ba Be Cd Cr Co Cu Pb Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn

Article 3: 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
		10/31/19 1640			10/31/19 1640



Chain of Custody

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)565-3443 Lubbock, TX (806)794-1296
 Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Work Order No: 441798

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com

Project Name:	Remedial State Basin #2	Turn Around	Routine ☒
Project Number:	288-1534/14585	Rush:	
P.O. Number:		Due Date:	
Sampler's Name:	Spencer Lo		

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers			ANALYSIS REQUEST												Work Order Notes
					TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)													
PH08	5	10/30/19	910	1	X	X	X													
PH08A			910	2																
PH08B			930	3																
PH08C			990	4																
PH08D			950	5																
PH08E			1000	6																
PH09			1020	1																
PH09A			1030	2																
PH09B			1040	3																
PH10			1100	1																

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

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.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10/31/19 1040			10/31/19 1048



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

Chain of Custody

Work Order No: 1041798

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slg@ltenv.com, dmoir@ltenv.com

Project Name:	Permian State Basin #2	Turn Around	
Project Number:	28P-1534/4585	Routine	☐
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):						
Received Intact:	Yes	No	Correction Factor:			
Cooler Custody Seals:	Yes	No	Total Containers:			
Sample Custody Seals:	Yes	No				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments									
PH104	S	10-30-19	1110	2	1	X	X	X										
PH10B			1120	3														
PH10C			1130	4														
PH11			1310	1														
PH11A			1320	2														
PH11B PH11B			1330	3	1	X	X	X										

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10/31/19 1040			10/31/19 1048

Analytical Report 642028

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remunda State Basin #2

12-NOV-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



12-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **642028**

Remunda State Basin #2

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 642028. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 642028 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

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

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



Sample Cross Reference 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH12	S	11-04-19 12:15	1 ft	642028-001
PH12A	S	11-04-19 12:25	2 ft	642028-002
PH12B	S	11-04-19 12:30	3 ft	642028-003
PH12C	S	11-04-19 12:35	4 ft	642028-004
PH12D	S	11-04-19 12:45	5 ft	642028-005
PH13	S	11-04-19 13:00	1 ft	642028-006
PH13A	S	11-04-19 13:15	2 ft	642028-007
PH13B	S	11-04-19 13:25	3 ft	642028-008
PH14	S	11-04-19 13:45	1 ft	642028-009
PH14A	S	11-04-19 13:55	2 ft	642028-010
PH14B	S	11-04-19 14:10	3 ft	642028-011
PH14C	S	11-04-19 14:20	4 ft	642028-012
FS01	S	11-04-19 10:20	5 ft	642028-013
FS02	S	11-04-19 10:40	5 ft	642028-014
FS03	S	11-04-19 10:50	1 - 5 ft	642028-015
SW01	S	11-04-19 11:10	1 - 5 ft	642028-016
SW02	S	11-04-19 11:15	1 - 5 ft	642028-017
SW03	S	11-04-19 11:30	1 - 5 ft	642028-018
SW04	S	11-04-19 12:15	1 - 5 ft	642028-019



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remunda State Basin #2

Project ID:

Work Order Number(s): 642028

Report Date: 12-NOV-19

Date Received: 11/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106852 BTEX by EPA 8021B

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



Certificate of Analysis Summary 642028

LT Environmental, Inc., Arvada, CO

Project Name: Remunda State Basin #2

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Nov-05-19 08:38 am

Report Date: 12-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	642028-001	642028-002	642028-003	642028-004	642028-005	642028-006
	<i>Field Id:</i>	PH12	PH12A	PH12B	PH12C	PH12D	PH13
	<i>Depth:</i>	1- ft	2- ft	3- ft	4- ft	5- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-04-19 12:15	Nov-04-19 12:25	Nov-04-19 12:30	Nov-04-19 12:35	Nov-04-19 12:45	Nov-04-19 13:00
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30
SUB: T104704400-19-19	<i>Analyzed:</i>	Nov-07-19 18:43	Nov-07-19 19:04	Nov-07-19 19:24	Nov-07-19 19:44	Nov-07-19 20:04	Nov-07-19 20:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.0000199 0.0000199	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202
Toluene		<0.00199 0.00199	<0.0000199 0.0000199	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202
Ethylbenzene		<0.00199 0.00199	<0.0000199 0.0000199	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202
m,p-Xylenes		<0.00398 0.00398	<0.0000398 0.0000398	<0.00402 0.00402	<0.00396 0.00396	<0.00403 0.00403	<0.00403 0.00403
o-Xylene		<0.00199 0.00199	<0.0000199 0.0000199	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202
Total Xylenes		<0.00199 0.00199	<0.0000199 0.0000199	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202
Total BTEX		<0.00199 0.00199	<0.0000199 0.0000199	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Nov-06-19 16:25	Nov-06-19 16:25	Nov-06-19 16:25	Nov-06-19 16:25	Nov-06-19 16:25	Nov-06-19 16:25
SUB: T104704400-19-19	<i>Analyzed:</i>	Nov-07-19 00:30	Nov-07-19 00:36	Nov-07-19 00:42	Nov-07-19 01:08	Nov-07-19 01:14	Nov-07-19 01:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1800 24.8	2370 25.0	2250 49.8	1170 50.3	1650 50.2	1350 24.9
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00
SUB: T104704400-19-19	<i>Analyzed:</i>	Nov-06-19 23:53	Nov-07-19 00:58	Nov-07-19 01:20	Nov-07-19 01:42	Nov-07-19 02:03	Nov-07-19 02:25
	<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	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.0 50.0
Total GRO-DRO		<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.0 50.0
Total TPH		<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.0 50.0

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 642028

LT Environmental, Inc., Arvada, CO

Project Name: Remunda State Basin #2

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Nov-05-19 08:38 am

Report Date: 12-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	642028-007	642028-008	642028-009	642028-010	642028-011	642028-012
	<i>Field Id:</i>	PH13A	PH13B	PH14	PH14A	PH14B	PH14C
	<i>Depth:</i>	2- ft	3- ft	1- ft	2- ft	3- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-04-19 13:15	Nov-04-19 13:25	Nov-04-19 13:45	Nov-04-19 13:55	Nov-04-19 14:10	Nov-04-19 14:20
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30
SUB: T104704400-19-19	<i>Analyzed:</i>	Nov-07-19 20:44	Nov-07-19 21:04	Nov-07-19 21:25	Nov-07-19 22:43	Nov-07-19 23:04	Nov-07-19 23:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00199 0.00199
Toluene		<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00199 0.00199
Ethylbenzene		<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00199 0.00199
m,p-Xylenes		<0.00397 0.00397	<0.00404 0.00404	<0.00402 0.00402	<0.00403 0.00403	<0.00397 0.00397	<0.00398 0.00398
o-Xylene		<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00199 0.00199
Total Xylenes		<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00199 0.00199
Total BTEX		<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	Nov-06-19 16:25	Nov-06-19 16:25	Nov-06-19 16:25	Nov-06-19 16:25	Nov-06-19 16:25	Nov-06-19 17:30
SUB: T104704400-19-19	<i>Analyzed:</i>	Nov-07-19 01:39	Nov-07-19 01:46	Nov-07-19 01:52	Nov-07-19 01:58	Nov-07-19 02:05	Nov-07-19 03:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1610 50.0	1570 50.0	5880 49.7	4470 50.3	3990 25.0	1930 50.0
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00
SUB: T104704400-19-19	<i>Analyzed:</i>	Nov-07-19 02:47	Nov-07-19 03:09	Nov-07-19 03:31	Nov-07-19 03:52	Nov-07-19 04:36	Nov-07-19 04:58
	<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	<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8
Total GRO-DRO		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8
Total TPH		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 642028

LT Environmental, Inc., Arvada, CO

Project Name: Remunda State Basin #2

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Nov-05-19 08:38 am

Report Date: 12-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	642028-013	642028-014	642028-015	642028-016	642028-017	642028-018
	<i>Field Id:</i>	FS01	FS02	FS03	SW01	SW02	SW03
	<i>Depth:</i>	5- ft	5- ft	1-5 ft	1-5 ft	1-5 ft	1-5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-04-19 10:20	Nov-04-19 10:40	Nov-04-19 10:50	Nov-04-19 11:10	Nov-04-19 11:15	Nov-04-19 11:30
BTEX by EPA 8021B SUB: T104704400-19-19	<i>Extracted:</i>	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30	Nov-06-19 15:30
	<i>Analyzed:</i>	Nov-07-19 23:44	Nov-08-19 00:04	Nov-08-19 00:24	Nov-08-19 00:44	Nov-08-19 01:04	Nov-08-19 01:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
m,p-Xylenes		<0.00397 0.00397	<0.00399 0.00399	<0.00396 0.00396	<0.00402 0.00402	<0.00398 0.00398	<0.00404 0.00404
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Chloride by EPA 300 SUB: T104704400-19-19	<i>Extracted:</i>	Nov-06-19 17:30	Nov-06-19 17:30	Nov-06-19 17:30	Nov-06-19 17:30	Nov-06-19 17:30	Nov-06-19 17:30
	<i>Analyzed:</i>	Nov-07-19 03:15	Nov-07-19 03:21	Nov-07-19 03:27	Nov-07-19 07:57	Nov-07-19 08:03	Nov-07-19 08:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		916 49.8	724 50.3	723 49.9	355 50.4	296 50.1	790 50.4
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 14:00	Nov-06-19 16:00	Nov-06-19 16:00
	<i>Analyzed:</i>	Nov-07-19 05:20	Nov-07-19 05:41	Nov-07-19 06:03	Nov-07-19 06:25	Nov-06-19 22:50	Nov-06-19 23:09
	<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	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Total TPH		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 642028

LT Environmental, Inc., Arvada, CO

Project Name: Remunda State Basin #2

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Nov-05-19 08:38 am

Report Date: 12-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	642028-019					
	Field Id:	SW04					
	Depth:	1-5 ft					
	Matrix:	SOIL					
	Sampled:	Nov-04-19 12:15					
BTEX by EPA 8021B SUB: T104704400-19-19	Extracted:	Nov-06-19 15:30					
	Analyzed:	Nov-08-19 08:30					
	Units/RL:	mg/kg RL					
Benzene		<0.00198 0.00198					
Toluene		<0.00198 0.00198					
Ethylbenzene		<0.00198 0.00198					
m,p-Xylenes		<0.00396 0.00396					
o-Xylene		<0.00198 0.00198					
Total Xylenes		<0.00198 0.00198					
Total BTEX		<0.00198 0.00198					
Chloride by EPA 300 SUB: T104704400-19-19	Extracted:	Nov-06-19 17:30					
	Analyzed:	Nov-07-19 08:16					
	Units/RL:	mg/kg RL					
Chloride		476 49.9					
TPH by SW8015 Mod SUB: T104704400-19-19	Extracted:	Nov-06-19 16:00					
	Analyzed:	Nov-06-19 23:27					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0					
Diesel Range Organics (DRO)		<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0					
Total GRO-DRO		<50.0 50.0					
Total TPH		<50.0 50.0					

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12**
Lab Sample Id: 642028-001

Matrix: Soil
Date Collected: 11.04.19 12.15

Date Received: 11.05.19 08.38
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1800	24.8	mg/kg	11.07.19 00.30		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.06.19 23.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.06.19 23.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.06.19 23.53	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.06.19 23.53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.06.19 23.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.06.19 23.53	
o-Terphenyl	84-15-1	101	%	70-135	11.06.19 23.53	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12**
 Lab Sample Id: 642028-001

Matrix: Soil
 Date Collected: 11.04.19 12.15

Date Received: 11.05.19 08.38
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.07.19 18.43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.07.19 18.43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.07.19 18.43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.07.19 18.43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.07.19 18.43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.07.19 18.43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.07.19 18.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.07.19 18.43		
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.07.19 18.43		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12A**
Lab Sample Id: 642028-002

Matrix: Soil
Date Collected: 11.04.19 12.25

Date Received: 11.05.19 08.38
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2370	25.0	mg/kg	11.07.19 00.36		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.07.19 00.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.07.19 00.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.07.19 00.58	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.07.19 00.58	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.07.19 00.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	11.07.19 00.58	
o-Terphenyl	84-15-1	92	%	70-135	11.07.19 00.58	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12A**
 Lab Sample Id: 642028-002

Matrix: Soil
 Date Collected: 11.04.19 12.25

Date Received: 11.05.19 08.38
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0000199	0.0000199	mg/kg	11.07.19 19.04	U	1
Toluene	108-88-3	<0.0000199	0.0000199	mg/kg	11.07.19 19.04	U	1
Ethylbenzene	100-41-4	<0.0000199	0.0000199	mg/kg	11.07.19 19.04	U	1
m,p-Xylenes	179601-23-1	<0.0000398	0.0000398	mg/kg	11.07.19 19.04	U	1
o-Xylene	95-47-6	<0.0000199	0.0000199	mg/kg	11.07.19 19.04	U	1
Total Xylenes	1330-20-7	<0.0000199	0.0000199	mg/kg	11.07.19 19.04	U	1
Total BTEX		<0.0000199	0.0000199	mg/kg	11.07.19 19.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	11.07.19 19.04		
4-Bromofluorobenzene	460-00-4	123	%	70-130	11.07.19 19.04		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12B**
Lab Sample Id: 642028-003

Matrix: Soil
Date Collected: 11.04.19 12.30

Date Received: 11.05.19 08.38
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2250	49.8	mg/kg	11.07.19 00.42		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.07.19 01.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.07.19 01.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.07.19 01.20	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.07.19 01.20	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.07.19 01.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	11.07.19 01.20	
o-Terphenyl	84-15-1	90	%	70-135	11.07.19 01.20	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12B**
Lab Sample Id: 642028-003

Matrix: Soil
Date Collected: 11.04.19 12.30

Date Received: 11.05.19 08.38
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.07.19 19.24	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.07.19 19.24	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.07.19 19.24	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.07.19 19.24	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.07.19 19.24	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.07.19 19.24	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.07.19 19.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.07.19 19.24		
4-Bromofluorobenzene	460-00-4	106	%	70-130	11.07.19 19.24		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12C**
Lab Sample Id: 642028-004

Matrix: Soil
Date Collected: 11.04.19 12.35

Date Received: 11.05.19 08.38
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1170	50.3	mg/kg	11.07.19 01.08		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.07.19 01.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.07.19 01.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.07.19 01.42	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.07.19 01.42	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.07.19 01.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.07.19 01.42	
o-Terphenyl	84-15-1	88	%	70-135	11.07.19 01.42	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12C**
 Lab Sample Id: 642028-004

Matrix: Soil
 Date Collected: 11.04.19 12.35

Date Received: 11.05.19 08.38
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.07.19 19.44	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.07.19 19.44	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.07.19 19.44	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.07.19 19.44	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.07.19 19.44	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.07.19 19.44	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.07.19 19.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.07.19 19.44		
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.07.19 19.44		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12D**
Lab Sample Id: 642028-005

Matrix: Soil
Date Collected: 11.04.19 12.45

Date Received: 11.05.19 08.38
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1650	50.2	mg/kg	11.07.19 01.14		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.07.19 02.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.07.19 02.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.07.19 02.03	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.07.19 02.03	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.07.19 02.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.07.19 02.03	
o-Terphenyl	84-15-1	88	%	70-135	11.07.19 02.03	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH12D**
 Lab Sample Id: 642028-005

Matrix: Soil
 Date Collected: 11.04.19 12.45

Date Received: 11.05.19 08.38
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.07.19 20.04	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.07.19 20.04	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.07.19 20.04	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.07.19 20.04	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.07.19 20.04	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.07.19 20.04	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.07.19 20.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.07.19 20.04		
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.07.19 20.04		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH13**
Lab Sample Id: 642028-006

Matrix: Soil
Date Collected: 11.04.19 13.00

Date Received: 11.05.19 08.38
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1350	24.9	mg/kg	11.07.19 01.33		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.07.19 02.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.07.19 02.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.07.19 02.25	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.07.19 02.25	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.07.19 02.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.07.19 02.25	
o-Terphenyl	84-15-1	103	%	70-135	11.07.19 02.25	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH13**
 Lab Sample Id: 642028-006

Matrix: Soil
 Date Collected: 11.04.19 13.00

Date Received: 11.05.19 08.38
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 11.06.19 15.30

Basis: Wet Weight

Seq Number: 3106852

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.07.19 20.24	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.07.19 20.24	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.07.19 20.24	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.07.19 20.24	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.07.19 20.24	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.07.19 20.24	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.07.19 20.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	11.07.19 20.24		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.07.19 20.24		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH13A**
Lab Sample Id: 642028-007

Matrix: Soil
Date Collected: 11.04.19 13.15

Date Received: 11.05.19 08.38
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1610	50.0	mg/kg	11.07.19 01.39		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.07.19 02.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.07.19 02.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.07.19 02.47	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.07.19 02.47	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.07.19 02.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.07.19 02.47	
o-Terphenyl	84-15-1	98	%	70-135	11.07.19 02.47	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH13A**
 Lab Sample Id: 642028-007

Matrix: Soil
 Date Collected: 11.04.19 13.15

Date Received: 11.05.19 08.38
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 11.06.19 15.30

Basis: Wet Weight

Seq Number: 3106852

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.07.19 20.44	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.07.19 20.44	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.07.19 20.44	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.07.19 20.44	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.07.19 20.44	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.07.19 20.44	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.07.19 20.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.07.19 20.44		
4-Bromofluorobenzene	460-00-4	104	%	70-130	11.07.19 20.44		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH13B**
Lab Sample Id: 642028-008

Matrix: Soil
Date Collected: 11.04.19 13.25

Date Received: 11.05.19 08.38
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1570	50.0	mg/kg	11.07.19 01.46		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.07.19 03.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.07.19 03.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.07.19 03.09	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.07.19 03.09	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.07.19 03.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.07.19 03.09	
o-Terphenyl	84-15-1	88	%	70-135	11.07.19 03.09	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH13B**
Lab Sample Id: 642028-008

Matrix: Soil
Date Collected: 11.04.19 13.25

Date Received: 11.05.19 08.38
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.07.19 21.04	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.07.19 21.04	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.07.19 21.04	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.07.19 21.04	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.07.19 21.04	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.07.19 21.04	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.07.19 21.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	11.07.19 21.04		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.07.19 21.04		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH14**
Lab Sample Id: 642028-009

Matrix: Soil
Date Collected: 11.04.19 13.45

Date Received: 11.05.19 08.38
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5880	49.7	mg/kg	11.07.19 01.52		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.07.19 03.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.07.19 03.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.07.19 03.31	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.07.19 03.31	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.07.19 03.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	11.07.19 03.31	
o-Terphenyl	84-15-1	90	%	70-135	11.07.19 03.31	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH14**
 Lab Sample Id: 642028-009

Matrix: Soil
 Date Collected: 11.04.19 13.45

Date Received: 11.05.19 08.38
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.07.19 21.25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.07.19 21.25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.07.19 21.25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.07.19 21.25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.07.19 21.25	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.07.19 21.25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.07.19 21.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.07.19 21.25		
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.07.19 21.25		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH14A**
Lab Sample Id: 642028-010

Matrix: Soil
Date Collected: 11.04.19 13.55

Date Received: 11.05.19 08.38
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4470	50.3	mg/kg	11.07.19 01.58		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.07.19 03.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.07.19 03.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.07.19 03.52	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.07.19 03.52	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.07.19 03.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	11.07.19 03.52	
o-Terphenyl	84-15-1	90	%	70-135	11.07.19 03.52	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH14A**
 Lab Sample Id: 642028-010

Matrix: Soil
 Date Collected: 11.04.19 13.55

Date Received: 11.05.19 08.38
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.07.19 22.43	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.07.19 22.43	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.07.19 22.43	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.07.19 22.43	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.07.19 22.43	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.07.19 22.43	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.07.19 22.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.07.19 22.43		
4-Bromofluorobenzene	460-00-4	102	%	70-130	11.07.19 22.43		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH14B**
Lab Sample Id: 642028-011

Matrix: Soil
Date Collected: 11.04.19 14.10

Date Received: 11.05.19 08.38
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106729

Date Prep: 11.06.19 16.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3990	25.0	mg/kg	11.07.19 02.05		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.07.19 04.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.07.19 04.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.07.19 04.36	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.07.19 04.36	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.07.19 04.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	11.07.19 04.36	
o-Terphenyl	84-15-1	92	%	70-135	11.07.19 04.36	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH14B**
 Lab Sample Id: 642028-011

Matrix: Soil
 Date Collected: 11.04.19 14.10

Date Received: 11.05.19 08.38
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.07.19 23.04	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.07.19 23.04	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.07.19 23.04	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.07.19 23.04	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.07.19 23.04	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.07.19 23.04	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.07.19 23.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	11.07.19 23.04		
4-Bromofluorobenzene	460-00-4	107	%	70-130	11.07.19 23.04		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH14C**
Lab Sample Id: 642028-012

Matrix: Soil
Date Collected: 11.04.19 14.20

Date Received: 11.05.19 08.38
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106731

Date Prep: 11.06.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1930	50.0	mg/kg	11.07.19 03.08		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.07.19 04.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.07.19 04.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.07.19 04.58	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.07.19 04.58	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.07.19 04.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.07.19 04.58	
o-Terphenyl	84-15-1	97	%	70-135	11.07.19 04.58	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **PH14C**
 Lab Sample Id: 642028-012

Matrix: Soil
 Date Collected: 11.04.19 14.20

Date Received: 11.05.19 08.38
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.07.19 23.24	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.07.19 23.24	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.07.19 23.24	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.07.19 23.24	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.07.19 23.24	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.07.19 23.24	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.07.19 23.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.07.19 23.24		
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.07.19 23.24		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **FS01**
Lab Sample Id: 642028-013

Matrix: Soil
Date Collected: 11.04.19 10.20

Date Received: 11.05.19 08.38
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106731

Date Prep: 11.06.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	916	49.8	mg/kg	11.07.19 03.15		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.07.19 05.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.07.19 05.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.07.19 05.20	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.07.19 05.20	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.07.19 05.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.07.19 05.20	
o-Terphenyl	84-15-1	91	%	70-135	11.07.19 05.20	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **FS01**
 Lab Sample Id: 642028-013

Matrix: Soil
 Date Collected: 11.04.19 10.20

Date Received: 11.05.19 08.38
 Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.07.19 23.44	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.07.19 23.44	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.07.19 23.44	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.07.19 23.44	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.07.19 23.44	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.07.19 23.44	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.07.19 23.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.07.19 23.44		
4-Bromofluorobenzene	460-00-4	100	%	70-130	11.07.19 23.44		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **FS02** Matrix: Soil Date Received: 11.05.19 08.38
 Lab Sample Id: 642028-014 Date Collected: 11.04.19 10.40 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 11.06.19 17.30 Basis: Wet Weight
 Seq Number: 3106731 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	724	50.3	mg/kg	11.07.19 03.21		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 11.06.19 14.00 Basis: Wet Weight
 Seq Number: 3106764 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.07.19 05.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.07.19 05.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.07.19 05.41	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.07.19 05.41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.07.19 05.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	11.07.19 05.41	
o-Terphenyl	84-15-1	88	%	70-135	11.07.19 05.41	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **FS02**
Lab Sample Id: 642028-014

Matrix: Soil
Date Collected: 11.04.19 10.40

Date Received: 11.05.19 08.38
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.08.19 00.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.08.19 00.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.08.19 00.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.08.19 00.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.08.19 00.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.08.19 00.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.08.19 00.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.08.19 00.04		
4-Bromofluorobenzene	460-00-4	99	%	70-130	11.08.19 00.04		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **FS03**
Lab Sample Id: 642028-015

Matrix: Soil
Date Collected: 11.04.19 10.50

Date Received: 11.05.19 08.38
Sample Depth: 1 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106731

Date Prep: 11.06.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	723	49.9	mg/kg	11.07.19 03.27		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.07.19 06.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.07.19 06.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.07.19 06.03	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.07.19 06.03	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.07.19 06.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.07.19 06.03	
o-Terphenyl	84-15-1	91	%	70-135	11.07.19 06.03	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **FS03**
 Lab Sample Id: 642028-015

Matrix: Soil
 Date Collected: 11.04.19 10.50

Date Received: 11.05.19 08.38
 Sample Depth: 1 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 11.06.19 15.30

Basis: Wet Weight

Seq Number: 3106852

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.08.19 00.24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.08.19 00.24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.08.19 00.24	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.08.19 00.24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.08.19 00.24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.08.19 00.24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.08.19 00.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.08.19 00.24		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.08.19 00.24		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **SW01**
Lab Sample Id: 642028-016

Matrix: Soil
Date Collected: 11.04.19 11.10

Date Received: 11.05.19 08.38
Sample Depth: 1 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106731

Date Prep: 11.06.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	355	50.4	mg/kg	11.07.19 07.57		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106764

Date Prep: 11.06.19 14.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.07.19 06.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.07.19 06.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.07.19 06.25	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.07.19 06.25	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.07.19 06.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.07.19 06.25	
o-Terphenyl	84-15-1	91	%	70-135	11.07.19 06.25	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **SW01**
 Lab Sample Id: 642028-016

Matrix: Soil
 Date Collected: 11.04.19 11.10

Date Received: 11.05.19 08.38
 Sample Depth: 1 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.08.19 00.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.08.19 00.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.08.19 00.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.08.19 00.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.08.19 00.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.08.19 00.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.08.19 00.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	11.08.19 00.44		
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.08.19 00.44		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **SW02**

Matrix: Soil

Date Received: 11.05.19 08.38

Lab Sample Id: 642028-017

Date Collected: 11.04.19 11.15

Sample Depth: 1 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 11.06.19 17.30

Basis: Wet Weight

Seq Number: 3106731

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	296	50.1	mg/kg	11.07.19 08.03		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 11.06.19 16.00

Basis: Wet Weight

Seq Number: 3106766

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.06.19 22.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.06.19 22.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.06.19 22.50	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.06.19 22.50	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.06.19 22.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.06.19 22.50	
o-Terphenyl	84-15-1	92	%	70-135	11.06.19 22.50	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **SW02**
 Lab Sample Id: 642028-017

Matrix: Soil
 Date Collected: 11.04.19 11.15

Date Received: 11.05.19 08.38
 Sample Depth: 1 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3106852

Prep Method: SW5030B

% Moisture:

Date Prep: 11.06.19 15.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.08.19 01.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.08.19 01.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.08.19 01.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.08.19 01.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.08.19 01.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.08.19 01.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.08.19 01.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.08.19 01.04		
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.08.19 01.04		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **SW03**
Lab Sample Id: 642028-018

Matrix: Soil
Date Collected: 11.04.19 11.30

Date Received: 11.05.19 08.38
Sample Depth: 1 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106731

Date Prep: 11.06.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	790	50.4	mg/kg	11.07.19 08.09		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106766

Date Prep: 11.06.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.06.19 23.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.06.19 23.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.06.19 23.09	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.06.19 23.09	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.06.19 23.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	11.06.19 23.09	
o-Terphenyl	84-15-1	90	%	70-135	11.06.19 23.09	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **SW03**
 Lab Sample Id: 642028-018

Matrix: Soil
 Date Collected: 11.04.19 11.30

Date Received: 11.05.19 08.38
 Sample Depth: 1 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 11.06.19 15.30

Basis: Wet Weight

Seq Number: 3106852

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.08.19 01.25	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.08.19 01.25	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.08.19 01.25	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.08.19 01.25	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.08.19 01.25	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.08.19 01.25	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.08.19 01.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	11.08.19 01.25		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.08.19 01.25		



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **SW04**
Lab Sample Id: 642028-019

Matrix: Soil
Date Collected: 11.04.19 12.15

Date Received: 11.05.19 08.38
Sample Depth: 1 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3106731

Date Prep: 11.06.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	476	49.9	mg/kg	11.07.19 08.16		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3106766

Date Prep: 11.06.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.06.19 23.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.06.19 23.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.06.19 23.27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.06.19 23.27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.06.19 23.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.06.19 23.27	
o-Terphenyl	84-15-1	91	%	70-135	11.06.19 23.27	



Certificate of Analytical Results 642028

LT Environmental, Inc., Arvada, CO

Remunda State Basin #2

Sample Id: **SW04**
 Lab Sample Id: 642028-019

Matrix: Soil
 Date Collected: 11.04.19 12.15

Date Received: 11.05.19 08.38
 Sample Depth: 1 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 11.06.19 15.30

Basis: Wet Weight

Seq Number: 3106852

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.08.19 08.30	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.08.19 08.30	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.08.19 08.30	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.08.19 08.30	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.08.19 08.30	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.08.19 08.30	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.08.19 08.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.08.19 08.30		
4-Bromofluorobenzene	460-00-4	98	%	70-130	11.08.19 08.30		



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Remunda State Basin #2

Analytical Method: Chloride by EPA 300

Seq Number: 3106729

MB Sample Id: 7689775-1-BLK

Matrix: Solid

LCS Sample Id: 7689775-1-BKS

Prep Method: E300P

Date Prep: 11.06.19

LCSD Sample Id: 7689775-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	263	105	262	105	90-110	0	20	mg/kg	11.06.19 23:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3106731

MB Sample Id: 7689776-1-BLK

Matrix: Solid

LCS Sample Id: 7689776-1-BKS

Prep Method: E300P

Date Prep: 11.06.19

LCSD Sample Id: 7689776-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	269	108	269	108	90-110	0	20	mg/kg	11.07.19 02:36	

Analytical Method: Chloride by EPA 300

Seq Number: 3106729

Parent Sample Id: 642208-017

Matrix: Soil

MS Sample Id: 642208-017 S

Prep Method: E300P

Date Prep: 11.06.19

MSD Sample Id: 642208-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	144	249	403	104	403	104	90-110	0	20	mg/kg	11.06.19 23:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3106729

Parent Sample Id: 642208-023

Matrix: Soil

MS Sample Id: 642208-023 S

Prep Method: E300P

Date Prep: 11.06.19

MSD Sample Id: 642208-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	19.9	249	292	109	290	108	90-110	1	20	mg/kg	11.07.19 00:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3106731

Parent Sample Id: 642212-001

Matrix: Soil

MS Sample Id: 642212-001 S

Prep Method: E300P

Date Prep: 11.06.19

MSD Sample Id: 642212-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	61.1	251	327	106	326	106	90-110	0	20	mg/kg	11.07.19 02:55	

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.
Remunda State Basin #2

Analytical Method: Chloride by EPA 300

Seq Number: 3106731

Parent Sample Id: 642212-003

Matrix: Soil

MS Sample Id: 642212-003 S

Prep Method: E300P

Date Prep: 11.06.19

MSD Sample Id: 642212-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.1	250	275	106	274	106	90-110	0	20	mg/kg	11.07.19 08:35	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106764

MB Sample Id: 7689747-1-BLK

Matrix: Solid

LCS Sample Id: 7689747-1-BKS

Prep Method: SW8015P

Date Prep: 11.06.19

LCSD Sample Id: 7689747-1-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)	<15.0	1000	947	95	962	96	70-135	2	20	mg/kg	11.06.19 23:10	
Diesel Range Organics (DRO)	<50.0	1000	1010	101	1030	103	70-135	2	20	mg/kg	11.06.19 23:10	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		103		104		70-135	%	11.06.19 23:10
o-Terphenyl	101		105		105		70-135	%	11.06.19 23:10

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106766

MB Sample Id: 7689759-1-BLK

Matrix: Solid

LCS Sample Id: 7689759-1-BKS

Prep Method: SW8015P

Date Prep: 11.06.19

LCSD Sample Id: 7689759-1-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)	<15.0	1000	1030	103	991	99	70-135	4	20	mg/kg	11.06.19 17:35	
Diesel Range Organics (DRO)	<15.0	1000	1010	101	973	97	70-135	4	20	mg/kg	11.06.19 17:35	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		125		117		70-135	%	11.06.19 17:35
o-Terphenyl	91		106		103		70-135	%	11.06.19 17:35

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106764

Matrix: Solid

MB Sample Id: 7689747-1-BLK

Prep Method: SW8015P

Date Prep: 11.06.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.06.19 22:48	

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.

Remunda State Basin #2

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106766

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.06.19

MB Sample Id: 7689759-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.06.19 17:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106764

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.06.19

Parent Sample Id: 642028-001

MS Sample Id: 642028-001 S

MSD Sample Id: 642028-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	939	94	905	91	70-135	4	20	mg/kg	11.07.19 00:15	
Diesel Range Organics (DRO)	15.7	998	993	98	971	96	70-135	2	20	mg/kg	11.07.19 00:15	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		96		70-135	%	11.07.19 00:15
o-Terphenyl	97		95		70-135	%	11.07.19 00:15

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106766

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.06.19

Parent Sample Id: 642212-001

MS Sample Id: 642212-001 S

MSD Sample Id: 642212-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	997	100	1010	101	70-135	1	20	mg/kg	11.06.19 18:30	
Diesel Range Organics (DRO)	<15.0	997	978	98	995	100	70-135	2	20	mg/kg	11.06.19 18:30	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		118		70-135	%	11.06.19 18:30
o-Terphenyl	101		100		70-135	%	11.06.19 18:30

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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.
Remunda State Basin #2

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106852

MB Sample Id: 7689750-1-BLK

Matrix: Solid

LCS Sample Id: 7689750-1-BKS

Prep Method: SW5030B

Date Prep: 11.06.19

LCSD Sample Id: 7689750-1-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	0.0992	99	0.102	102	70-130	3	35	mg/kg	11.07.19 16:23	
Toluene	<0.00200	0.100	0.0995	100	0.102	102	70-130	2	35	mg/kg	11.07.19 16:23	
Ethylbenzene	<0.00200	0.100	0.100	100	0.104	104	70-130	4	35	mg/kg	11.07.19 16:23	
m,p-Xylenes	<0.00400	0.200	0.206	103	0.214	107	70-130	4	35	mg/kg	11.07.19 16:23	
o-Xylene	<0.00200	0.100	0.0955	96	0.101	101	70-130	6	35	mg/kg	11.07.19 16:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		102		103		70-130	%	11.07.19 16:23
4-Bromofluorobenzene	96		107		116		70-130	%	11.07.19 16:23

Analytical Method: BTEX by EPA 8021B

Seq Number: 3106852

Parent Sample Id: 642028-001

Matrix: Soil

MS Sample Id: 642028-001 S

Prep Method: SW5030B

Date Prep: 11.06.19

MSD Sample Id: 642028-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.111	111	0.0896	90	70-130	21	35	mg/kg	11.07.19 17:04	
Toluene	<0.00200	0.100	0.102	102	0.0898	90	70-130	13	35	mg/kg	11.07.19 17:04	
Ethylbenzene	<0.00200	0.100	0.102	102	0.0891	89	70-130	14	35	mg/kg	11.07.19 17:04	
m,p-Xylenes	<0.00401	0.200	0.207	104	0.181	91	70-130	13	35	mg/kg	11.07.19 17:04	
o-Xylene	<0.00200	0.100	0.0977	98	0.0872	88	70-130	11	35	mg/kg	11.07.19 17:04	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		103		70-130	%	11.07.19 17:04
4-Bromofluorobenzene	120		119		70-130	%	11.07.19 17:04

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

Chain of Custody

Work Order No: 642028

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com
Project Name:	Remuda State Basin #2	Turn Around	
Project Number:	28-1534/4585	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	0.4	Thermometer ID	T-NJA-007				
Received Intact:	Yes	Correction Factor:	-0.2				
Cooler Custody Seals:	Yes	Total Containers:	19				
Sample Custody Seals:	Yes						

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)							
PH12	S	11-11-19	1215	1	1	X	X	X							
PH12A			1215	2											
PH12B			1230	3											
PH12C			1235	4											
PH12D			1245	5											
PH13			1300	1											
PH13A			1315	2											
PH13B			1325	3											
PH14			1345	1											
PH14A			1355	2											

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																	

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
		11/15/19 0838			



Chain of Custody

Work Order No: 642029

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 Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slm@ltenv.com, dmoir@ltenv.com

Project Name:	Rewards State Basin #2	Turn Around	
Project Number:	268-1534/4585	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

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

Project Name:	Rewards State Basin #2	Turn Around	
Project Number:	268-1534/4585	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

Temp Blank:	Yes	No	Wet Ice:	Yes	No
Received Intact:	Yes	No	Thermometer ID		
Cooler Custody Seals:	Yes	No	Correction Factor:		
Sample Custody Seals:	Yes	No	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
PH14 B	S	11-4-19	1410	3	1	X	X	X		
PH14 C			1420	4	1	X	X	X		
FS01			1020	5'						
FS02			1040	5'						
FS03			1040	5'						
SW01			1050	1-5'						
SW02			1110	1-5'						
SW03			1115	1-5'						
SW04			1130	1-5'						

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

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
		5/11/19 0838			

IOS Number **51463**

Date/Time: 11/05/19 10:02

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 776906507770

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
642028-001	S	PH12	11/04/19 12:15	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-001	S	PH12	11/04/19 12:15	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-001	S	PH12	11/04/19 12:15	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-002	S	PH12A	11/04/19 12:25	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-002	S	PH12A	11/04/19 12:25	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-002	S	PH12A	11/04/19 12:25	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-003	S	PH12B	11/04/19 12:30	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-003	S	PH12B	11/04/19 12:30	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-003	S	PH12B	11/04/19 12:30	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-004	S	PH12C	11/04/19 12:35	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-004	S	PH12C	11/04/19 12:35	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-004	S	PH12C	11/04/19 12:35	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-005	S	PH12D	11/04/19 12:45	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-005	S	PH12D	11/04/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-005	S	PH12D	11/04/19 12:45	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-006	S	PH13	11/04/19 13:00	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-006	S	PH13	11/04/19 13:00	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-006	S	PH13	11/04/19 13:00	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-007	S	PH13A	11/04/19 13:15	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-007	S	PH13A	11/04/19 13:15	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-007	S	PH13A	11/04/19 13:15	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-008	S	PH13B	11/04/19 13:25	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-008	S	PH13B	11/04/19 13:25	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-008	S	PH13B	11/04/19 13:25	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-009	S	PH14	11/04/19 13:45	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	

IOS Number **51463**

Date/Time: 11/05/19 10:02

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 776906507770

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
642028-009	S	PH14	11/04/19 13:45	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-009	S	PH14	11/04/19 13:45	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-010	S	PH14A	11/04/19 13:55	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-010	S	PH14A	11/04/19 13:55	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-010	S	PH14A	11/04/19 13:55	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-011	S	PH14B	11/04/19 14:10	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-011	S	PH14B	11/04/19 14:10	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-011	S	PH14B	11/04/19 14:10	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-012	S	PH14C	11/04/19 14:20	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-012	S	PH14C	11/04/19 14:20	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-012	S	PH14C	11/04/19 14:20	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-013	S	FS01	11/04/19 10:20	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-013	S	FS01	11/04/19 10:20	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-013	S	FS01	11/04/19 10:20	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-014	S	FS02	11/04/19 10:40	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-014	S	FS02	11/04/19 10:40	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-014	S	FS02	11/04/19 10:40	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-015	S	FS03	11/04/19 10:50	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-015	S	FS03	11/04/19 10:50	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-015	S	FS03	11/04/19 10:50	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-016	S	SW01	11/04/19 11:10	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-016	S	SW01	11/04/19 11:10	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-016	S	SW01	11/04/19 11:10	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-017	S	SW02	11/04/19 11:15	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-017	S	SW02	11/04/19 11:15	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	

Inter Office Shipment or Sample Comments:



Inter-Office Shipment

Page 3 of 3

IOS Number **51463**

Date/Time: 11/05/19 10:02

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 776906507770

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
642028-017	S	SW02	11/04/19 11:15	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-018	S	SW03	11/04/19 11:30	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-018	S	SW03	11/04/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-018	S	SW03	11/04/19 11:30	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	
642028-019	S	SW04	11/04/19 12:15	SW8015MOD_NM	TPH by SW8015 Mod	11/11/19	11/18/19	JKR	GRO-DRO PHCC10C28 PF	
642028-019	S	SW04	11/04/19 12:15	SW8021B	BTEX by EPA 8021B	11/11/19	11/18/19	JKR	BZ BZME EBZ XYLENES	
642028-019	S	SW04	11/04/19 12:15	E300_CL	Chloride by EPA 300	11/11/19	05/02/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Received By:

Date Relinquished:

Elizabeth McClellan

Date Received:

Brianna Teel

11/05/2019

Cooler Temperature:

11/06/2019 11:21

2.1



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 51463

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 11/05/2019 10:02 AM

Received By: Brianna Teel

Date Received: 11/06/2019 11:21 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 11/06/2019



Client: LT Environmental, Inc.

Date/ Time Received: 11/05/2019 08:38:00 AM

Work Order #: 642028

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.4	
#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)?	Yes	Subbed to Midland
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 11/05/2019

Checklist reviewed by:

Jessica Kramer

Date: 11/05/2019

Analytical Report 642851

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin State #2

012918133

14-NOV-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



14-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **642851**

Remuda Basin State #2

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 642851. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 642851 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 642851****LT Environmental, Inc., Arvada, CO**

Remuda Basin State #2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	11-11-19 10:10	0.5 ft	642851-001
SS02	S	11-11-19 10:20	0.5 ft	642851-002
SS03	S	11-11-19 10:30	0.5 ft	642851-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin State #2

Project ID: 012918133
Work Order Number(s): 642851

Report Date: 14-NOV-19
Date Received: 11/12/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107255 BTEX by EPA 8021B

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

Batch: LBA-3107339 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 642851-002.



Certificate of Analysis Summary 642851

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin State #2

Project Id: 012918133

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Nov-12-19 09:00 am

Report Date: 14-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	642851-001	642851-002	642851-003			
	<i>Field Id:</i>	SS01	SS02	SS03			
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Nov-11-19 10:10	Nov-11-19 10:20	Nov-11-19 10:30			
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-12-19 10:11	Nov-12-19 10:11	Nov-12-19 10:11			
	<i>Analyzed:</i>	Nov-12-19 18:51	Nov-12-19 19:11	Nov-12-19 19:30			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.000992 0.000992	<0.000996 0.000996	<0.000992 0.000992			
Toluene		<0.000992 0.000992	<0.000996 0.000996	<0.000992 0.000992			
Ethylbenzene		<0.000992 0.000992	<0.000996 0.000996	<0.000992 0.000992			
m,p-Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198			
o-Xylene		<0.000992 0.000992	<0.000996 0.000996	<0.000992 0.000992			
Total Xylenes		<0.000992 0.000992	<0.000996 0.000996	<0.000992 0.000992			
Total BTEX		<0.000992 0.000992	<0.000996 0.000996	<0.000992 0.000992			
Chloride by EPA 300	<i>Extracted:</i>	Nov-12-19 11:00	Nov-12-19 11:00	Nov-12-19 11:00			
	<i>Analyzed:</i>	Nov-12-19 15:43	Nov-12-19 15:50	Nov-12-19 15:56			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		22.4 10.1	65.0 10.0	42.7 9.92			
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-12-19 13:00	Nov-12-19 13:00	Nov-12-19 13:00			
	<i>Analyzed:</i>	Nov-12-19 19:05	Nov-12-19 19:25	Nov-12-19 19:44			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.0 50.0	<50.3 50.3			
Diesel Range Organics (DRO)		<50.1 50.1	<50.0 50.0	<50.3 50.3			
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.0 50.0	<50.3 50.3			
Total GRO-DRO		<50.1 50.1	<50.0 50.0	<50.3 50.3			
Total TPH		<50.1 50.1	<50.0 50.0	<50.3 50.3			

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 642851

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **SS01**
Lab Sample Id: 642851-001

Matrix: Soil
Date Collected: 11.11.19 10.10

Date Received: 11.12.19 09.00
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107262

Date Prep: 11.12.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.4	10.1	mg/kg	11.12.19 15.43		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107339

Date Prep: 11.12.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.12.19 19.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.12.19 19.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.12.19 19.05	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.12.19 19.05	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.12.19 19.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	11.12.19 19.05	
o-Terphenyl	84-15-1	131	%	70-135	11.12.19 19.05	



Certificate of Analytical Results 642851

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **SS01**
 Lab Sample Id: 642851-001

Matrix: Soil
 Date Collected: 11.11.19 10.10

Date Received: 11.12.19 09.00
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.12.19 10.11

Basis: Wet Weight

Seq Number: 3107255

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	11.12.19 18.51	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	11.12.19 18.51	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	11.12.19 18.51	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.12.19 18.51	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	11.12.19 18.51	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	11.12.19 18.51	U	1
Total BTEX		<0.000992	0.000992	mg/kg	11.12.19 18.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.12.19 18.51		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.12.19 18.51		



Certificate of Analytical Results 642851

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **SS02** Matrix: **Soil** Date Received: 11.12.19 09.00
 Lab Sample Id: 642851-002 Date Collected: 11.11.19 10.20 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: **MAB** % Moisture:
 Analyst: **MAB** Date Prep: 11.12.19 11.00 Basis: **Wet Weight**
 Seq Number: 3107262

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	65.0	10.0	mg/kg	11.12.19 15.50		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: **DTH** % Moisture:
 Analyst: **DTH** Date Prep: 11.12.19 13.00 Basis: **Wet Weight**
 Seq Number: 3107339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.12.19 19.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.12.19 19.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.12.19 19.25	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.12.19 19.25	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.12.19 19.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	136	%	70-135	11.12.19 19.25	**
o-Terphenyl	84-15-1	126	%	70-135	11.12.19 19.25	



Certificate of Analytical Results 642851

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: SS02
Lab Sample Id: 642851-002

Matrix: Soil
Date Collected: 11.11.19 10.20

Date Received: 11.12.19 09.00
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3107255

Prep Method: SW5030B

% Moisture:

Date Prep: 11.12.19 10.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.12.19 19.11	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.12.19 19.11	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.12.19 19.11	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.12.19 19.11	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.12.19 19.11	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.12.19 19.11	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.12.19 19.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.12.19 19.11		
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.12.19 19.11		



Certificate of Analytical Results 642851

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: SS03
Lab Sample Id: 642851-003

Matrix: Soil
Date Collected: 11.11.19 10.30

Date Received: 11.12.19 09.00
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107262

Date Prep: 11.12.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	42.7	9.92	mg/kg	11.12.19 15.56		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107339

Date Prep: 11.12.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.12.19 19.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.12.19 19.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.12.19 19.44	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.12.19 19.44	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.12.19 19.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	11.12.19 19.44	
o-Terphenyl	84-15-1	114	%	70-135	11.12.19 19.44	



Certificate of Analytical Results 642851

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **SS03**
 Lab Sample Id: 642851-003

Matrix: Soil
 Date Collected: 11.11.19 10.30

Date Received: 11.12.19 09.00
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.12.19 10.11

Basis: Wet Weight

Seq Number: 3107255

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	11.12.19 19.30	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	11.12.19 19.30	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	11.12.19 19.30	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.12.19 19.30	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	11.12.19 19.30	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	11.12.19 19.30	U	1
Total BTEX		<0.000992	0.000992	mg/kg	11.12.19 19.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.12.19 19.30		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.12.19 19.30		



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda Basin State #2

Analytical Method: Chloride by EPA 300

Seq Number: 3107262

MB Sample Id: 7690118-1-BLK

Matrix: Solid

LCS Sample Id: 7690118-1-BKS

Prep Method: E300P

Date Prep: 11.12.19

LCSD Sample Id: 7690118-1-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	254	102	90-110	0	20	mg/kg	11.12.19 12:36	

Analytical Method: Chloride by EPA 300

Seq Number: 3107262

Parent Sample Id: 642850-001

Matrix: Soil

MS Sample Id: 642850-001 S

Prep Method: E300P

Date Prep: 11.12.19

MSD Sample Id: 642850-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	26.6	200	235	104	236	104	90-110	0	20	mg/kg	11.12.19 12:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3107262

Parent Sample Id: 642850-011

Matrix: Soil

MS Sample Id: 642850-011 S

Prep Method: E300P

Date Prep: 11.12.19

MSD Sample Id: 642850-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	220	199	421	101	423	102	90-110	0	20	mg/kg	11.12.19 14:23	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107339

MB Sample Id: 7690225-1-BLK

Matrix: Solid

LCS Sample Id: 7690225-1-BKS

Prep Method: SW8015P

Date Prep: 11.12.19

LCSD Sample Id: 7690225-1-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	962	96	957	96	70-135	1	35	mg/kg	11.12.19 11:35	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1040	104	70-135	1	35	mg/kg	11.12.19 11:35	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		129		133		70-135	%	11.12.19 11:35
o-Terphenyl	120		127		126		70-135	%	11.12.19 11:35

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107339

Matrix: Solid

MB Sample Id: 7690225-1-BLK

Prep Method: SW8015P

Date Prep: 11.12.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.12.19 11:14	

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

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

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.

Remuda Basin State #2

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107339

Parent Sample Id: 642850-001

Matrix: Soil

MS Sample Id: 642850-001 S

Prep Method: SW8015P

Date Prep: 11.12.19

MSD Sample Id: 642850-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	995	1300	131	1330	133	70-135	2	35	mg/kg	11.12.19 13:20	
Diesel Range Organics (DRO)	<49.8	995	1350	136	1330	133	70-135	1	35	mg/kg	11.12.19 13:20	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		133		70-135	%	11.12.19 13:20
o-Terphenyl	122		132		70-135	%	11.12.19 13:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3107255

MB Sample Id: 7690177-1-BLK

Matrix: Solid

LCS Sample Id: 7690177-1-BKS

Prep Method: SW5030B

Date Prep: 11.12.19

LCSD Sample Id: 7690177-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0930	93	0.0940	94	70-130	1	35	mg/kg	11.12.19 12:03	
Toluene	<0.00100	0.100	0.0954	95	0.0967	97	70-130	1	35	mg/kg	11.12.19 12:03	
Ethylbenzene	<0.00100	0.100	0.0971	97	0.0983	98	71-129	1	35	mg/kg	11.12.19 12:03	
m,p-Xylenes	<0.00200	0.200	0.209	105	0.211	106	70-135	1	35	mg/kg	11.12.19 12:03	
o-Xylene	<0.00100	0.100	0.105	105	0.105	105	71-133	0	35	mg/kg	11.12.19 12:03	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		102		102		70-130	%	11.12.19 12:03
4-Bromofluorobenzene	109		116		117		70-130	%	11.12.19 12:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3107255

Parent Sample Id: 642850-001

Matrix: Soil

MS Sample Id: 642850-001 S

Prep Method: SW5030B

Date Prep: 11.12.19

MSD Sample Id: 642850-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.125	125	0.0690	69	70-130	58	35	mg/kg	11.12.19 12:41	XF
Toluene	<0.00100	0.100	0.126	126	0.0696	70	70-130	58	35	mg/kg	11.12.19 12:41	F
Ethylbenzene	<0.00100	0.100	0.127	127	0.0697	70	71-129	58	35	mg/kg	11.12.19 12:41	XF
m,p-Xylenes	<0.00200	0.200	0.271	136	0.149	75	70-135	58	35	mg/kg	11.12.19 12:41	XF
o-Xylene	<0.00100	0.100	0.137	137	0.0743	74	71-133	59	35	mg/kg	11.12.19 12:41	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		70-130	%	11.12.19 12:41
4-Bromofluorobenzene	121		120		70-130	%	11.12.19 12:41

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

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

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

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



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)

Chain of Custody

Work Order No: 1631 / 245.1 / 7470 / 7471

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:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com
Project Name:	Remediation site #2	Turn Around	
Project Number:	012418133	Routine	
P.O. Number:	28P-1534	Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Well Ice:	Yes ☒ No ☐
	Temperature (°C):	-0.8	Thermometer ID	T-NU-003
	Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2
	Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	3
	Sample Custody Seals:	Yes ☒ No ☐		

4 AM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (1)	BTEX	Chloride												Sample Comments
SS01	S	11/11/19	1010	0.5'	1	X	X	X												
SS02	S	11/11/19	1020	0.5'		X	X	X												
SS03	S	11/11/19	1030	0.5'		X	X	X												
Handwritten signature across the table																				

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	11/12/19 9:00			

Analytical Report 645106

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin State #2

012918133

09-DEC-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



09-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645106**

Remuda Basin State #2

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 XENCO Report Number(s) 645106. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 645106 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 645106****LT Environmental, Inc., Arvada, CO**

Remuda Basin State #2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01A	S	12-04-19 11:02	6 ft	645106-001
FS02A	S	12-04-19 11:03	6 ft	645106-002
FS03A	S	12-04-19 11:04	6 ft	645106-003
SW05	S	12-04-19 11:05	6 ft	645106-004
PH15	S	12-04-19 12:28	7 ft	645106-005
PH15A	S	12-04-19 12:31	8 ft	645106-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin State #2

Project ID: 012918133

Work Order Number(s): 645106

Report Date: 09-DEC-19

Date Received: 12/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109456 BTEX by EPA 8021B

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

Batch: LBA-3109484 TPH by SW8015 Mod

Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 645106-003 S.



Certificate of Analysis Summary 645106

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin State #2

Project Id: 012918133

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Wed Dec-04-19 03:36 pm

Report Date: 09-DEC-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	645106-001	645106-002	645106-003	645106-004	645106-005	645106-006
	<i>Field Id:</i>	FS01A	FS02A	FS03A	SW05	PH15	PH15A
	<i>Depth:</i>	6- ft	6- ft	6- ft	6- ft	7- ft	8- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-04-19 11:02	Dec-04-19 11:03	Dec-04-19 11:04	Dec-04-19 11:05	Dec-04-19 12:28	Dec-04-19 12:31
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-04-19 15:56	Dec-04-19 15:56	Dec-04-19 15:56	Dec-04-19 15:56	Dec-04-19 15:56	Dec-04-19 15:56
	<i>Analyzed:</i>	Dec-05-19 05:49	Dec-05-19 06:06	Dec-05-19 06:23	Dec-05-19 06:41	Dec-05-19 06:58	Dec-05-19 07:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00196 0.00196	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00196 0.00196	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00196 0.00196	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00399 0.00399	<0.00393 0.00393	<0.00402 0.00402	<0.00401 0.00401
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00196 0.00196	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00196 0.00196	<0.00201 0.00201	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00196 0.00196	<0.00201 0.00201	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Dec-05-19 07:30	Dec-05-19 07:30	Dec-05-19 07:30	Dec-05-19 07:30	Dec-05-19 07:30	Dec-05-19 07:30
	<i>Analyzed:</i>	Dec-05-19 13:02	Dec-05-19 13:08	Dec-05-19 13:14	Dec-05-19 13:20	Dec-05-19 13:25	Dec-05-19 13:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		241 D 10.0	829 202	1540 200	1340 98.8	1060 200	406 198
TPH by SW8015 Mod	<i>Extracted:</i>	Dec-04-19 16:00	Dec-04-19 16:00	Dec-04-19 17:00	Dec-04-19 17:00	Dec-04-19 17:00	Dec-04-19 17:00
	<i>Analyzed:</i>	Dec-05-19 04:46	Dec-05-19 04:46	Dec-05-19 05:45	Dec-05-19 06:04	Dec-05-19 06:24	Dec-05-19 06:24
	<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)		<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2
Diesel Range Organics (DRO)		<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2
Total GRO-DRO		<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2
Total TPH		<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2

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

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **FS01A**
 Lab Sample Id: 645106-001

Matrix: Soil
 Date Collected: 12.04.19 11.02

Date Received: 12.04.19 15.36
 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 07.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	241	10.0	mg/kg	12.05.19 14.02	D	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109468

Date Prep: 12.04.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.05.19 04.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.05.19 04.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.05.19 04.46	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.05.19 04.46	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.05.19 04.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	12.05.19 04.46	
o-Terphenyl	84-15-1	120	%	70-135	12.05.19 04.46	



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **FS01A**
 Lab Sample Id: 645106-001

Matrix: Soil
 Date Collected: 12.04.19 11.02

Date Received: 12.04.19 15.36
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 15.56

Basis: Wet Weight

Seq Number: 3109456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.05.19 05.49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.05.19 05.49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.05.19 05.49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.05.19 05.49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.05.19 05.49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.05.19 05.49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.05.19 05.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.05.19 05.49		
1,4-Difluorobenzene	540-36-3	99	%	70-130	12.05.19 05.49		



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **FS02A** Matrix: Soil Date Received: 12.04.19 15.36
 Lab Sample Id: 645106-002 Date Collected: 12.04.19 11.03 Sample Depth: 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 12.05.19 07.30 Basis: Wet Weight
 Seq Number: 3109512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	829	202	mg/kg	12.05.19 13.08		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 12.04.19 16.00 Basis: Wet Weight
 Seq Number: 3109468

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	12.05.19 04.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	12.05.19 04.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.05.19 04.46	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	12.05.19 04.46	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	12.05.19 04.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	12.05.19 04.46	
o-Terphenyl	84-15-1	114	%	70-135	12.05.19 04.46	



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **FS02A**
 Lab Sample Id: 645106-002

Matrix: Soil
 Date Collected: 12.04.19 11.03

Date Received: 12.04.19 15.36
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 15.56

Basis: Wet Weight

Seq Number: 3109456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 06.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 06.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 06.06	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.05.19 06.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 06.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 06.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 06.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	12.05.19 06.06		
1,4-Difluorobenzene	540-36-3	102	%	70-130	12.05.19 06.06		



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **FS03A**
 Lab Sample Id: 645106-003

Matrix: Soil
 Date Collected: 12.04.19 11.04

Date Received: 12.04.19 15.36
 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 07.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1540	200	mg/kg	12.05.19 13.14		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109484

Date Prep: 12.04.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.05.19 05.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.05.19 05.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.05.19 05.45	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	12.05.19 05.45	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.05.19 05.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	12.05.19 05.45	
o-Terphenyl	84-15-1	115	%	70-135	12.05.19 05.45	



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **FS03A**
 Lab Sample Id: 645106-003

Matrix: Soil
 Date Collected: 12.04.19 11.04

Date Received: 12.04.19 15.36
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 15.56

Basis: Wet Weight

Seq Number: 3109456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 06.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 06.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 06.23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.05.19 06.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 06.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 06.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 06.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	12.05.19 06.23		
1,4-Difluorobenzene	540-36-3	101	%	70-130	12.05.19 06.23		



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **SW05**
Lab Sample Id: 645106-004

Matrix: Soil
Date Collected: 12.04.19 11.05

Date Received: 12.04.19 15.36
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 07.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1340	98.8	mg/kg	12.05.19 13.20		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109484

Date Prep: 12.04.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.05.19 06.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.05.19 06.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.05.19 06.04	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.05.19 06.04	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.05.19 06.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	12.05.19 06.04	
o-Terphenyl	84-15-1	119	%	70-135	12.05.19 06.04	



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **SW05**
 Lab Sample Id: 645106-004

Matrix: Soil
 Date Collected: 12.04.19 11.05

Date Received: 12.04.19 15.36
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 15.56

Basis: Wet Weight

Seq Number: 3109456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00196	0.00196	mg/kg	12.05.19 06.41	U	1
Toluene	108-88-3	<0.00196	0.00196	mg/kg	12.05.19 06.41	U	1
Ethylbenzene	100-41-4	<0.00196	0.00196	mg/kg	12.05.19 06.41	U	1
m,p-Xylenes	179601-23-1	<0.00393	0.00393	mg/kg	12.05.19 06.41	U	1
o-Xylene	95-47-6	<0.00196	0.00196	mg/kg	12.05.19 06.41	U	1
Total Xylenes	1330-20-7	<0.00196	0.00196	mg/kg	12.05.19 06.41	U	1
Total BTEX		<0.00196	0.00196	mg/kg	12.05.19 06.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.05.19 06.41		
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.05.19 06.41		



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **PH15**
Lab Sample Id: 645106-005

Matrix: Soil
Date Collected: 12.04.19 12.28

Date Received: 12.04.19 15.36
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 07.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1060	200	mg/kg	12.05.19 13.25		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109484

Date Prep: 12.04.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	12.05.19 06.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	12.05.19 06.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.05.19 06.24	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	12.05.19 06.24	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	12.05.19 06.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	12.05.19 06.24	
o-Terphenyl	84-15-1	121	%	70-135	12.05.19 06.24	



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **PH15**
 Lab Sample Id: 645106-005

Matrix: Soil
 Date Collected: 12.04.19 12.28

Date Received: 12.04.19 15.36
 Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 15.56

Basis: Wet Weight

Seq Number: 3109456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.05.19 06.58	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.05.19 06.58	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.05.19 06.58	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.05.19 06.58	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.05.19 06.58	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.05.19 06.58	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.05.19 06.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	12.05.19 06.58		
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.05.19 06.58		



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **PH15A**
Lab Sample Id: 645106-006

Matrix: Soil
Date Collected: 12.04.19 12.31

Date Received: 12.04.19 15.36
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 07.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	406	198	mg/kg	12.05.19 13.43		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109484

Date Prep: 12.04.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	12.05.19 06.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	12.05.19 06.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.05.19 06.24	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	12.05.19 06.24	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	12.05.19 06.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.05.19 06.24	
o-Terphenyl	84-15-1	119	%	70-135	12.05.19 06.24	



Certificate of Analytical Results 645106

LT Environmental, Inc., Arvada, CO

Remuda Basin State #2

Sample Id: **PH15A**
 Lab Sample Id: 645106-006

Matrix: Soil
 Date Collected: 12.04.19 12.31

Date Received: 12.04.19 15.36
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 15.56

Basis: Wet Weight

Seq Number: 3109456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 07.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 07.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 07.24	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.05.19 07.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 07.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 07.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 07.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	12.05.19 07.24		
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.05.19 07.24		



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda Basin State #2

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

MB Sample Id: 7691692-1-BLK

Matrix: Solid

LCS Sample Id: 7691692-1-BKS

Prep Method: E300P

Date Prep: 12.05.19

LCSD Sample Id: 7691692-1-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	263	105	266	106	90-110	1	20	mg/kg	12.05.19 12:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

Parent Sample Id: 645018-006

Matrix: Soil

MS Sample Id: 645018-006 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645018-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	295	200	487	96	487	96	90-110	0	20	mg/kg	12.05.19 15:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

Parent Sample Id: 645131-001

Matrix: Soil

MS Sample Id: 645131-001 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645131-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	171	2000	1950	89	1930	88	90-110	1	20	mg/kg	12.05.19 12:45	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109468

MB Sample Id: 7691723-1-BLK

Matrix: Solid

LCS Sample Id: 7691723-1-BKS

Prep Method: SW8015P

Date Prep: 12.04.19

LCSD Sample Id: 7691723-1-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	885	89	971	97	70-135	9	35	mg/kg	12.05.19 00:49	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1110	111	70-135	4	35	mg/kg	12.05.19 00:49	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		123		130		70-135	%	12.05.19 00:49
o-Terphenyl	106		129		130		70-135	%	12.05.19 00:49

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.

Remuda Basin State #2

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109484

MB Sample Id: 7691735-1-BLK

Matrix: Solid

LCS Sample Id: 7691735-1-BKS

Prep Method: SW8015P

Date Prep: 12.04.19

LCSD Sample Id: 7691735-1-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	933	93	964	96	70-135	3	35	mg/kg	12.05.19 05:25	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1200	120	70-135	11	35	mg/kg	12.05.19 05:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		127		133		70-135	%	12.05.19 05:25
o-Terphenyl	112		128		132		70-135	%	12.05.19 05:25

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109468

Matrix: Solid

MB Sample Id: 7691723-1-BLK

Prep Method: SW8015P

Date Prep: 12.04.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.05.19 00:49	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109468

Matrix: Solid

MB Sample Id: 7691735-1-BLK

Prep Method: SW8015P

Date Prep: 12.04.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.05.19 05:05	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109468

Matrix: Soil

Parent Sample Id: 645063-009

MS Sample Id: 645063-009 S

Prep Method: SW8015P

Date Prep: 12.04.19

MSD Sample Id: 645063-009 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	945	95	929	93	70-135	2	35	mg/kg	12.05.19 10:54	
Diesel Range Organics (DRO)	<49.8	995	1150	116	1110	111	70-135	4	35	mg/kg	12.05.19 10:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	134		126		70-135	%	12.05.19 10:54
o-Terphenyl	135		131		70-135	%	12.05.19 10:54

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.

Remuda Basin State #2

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109484

Parent Sample Id: 645106-003

Matrix: Soil

MS Sample Id: 645106-003 S

Prep Method: SW8015P

Date Prep: 12.04.19

MSD Sample Id: 645106-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	987	99	929	93	70-135	6	35	mg/kg	12.05.19 05:45	
Diesel Range Organics (DRO)	<50.2	1000	1220	122	1080	108	70-135	12	35	mg/kg	12.05.19 05:45	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	136	**	130		70-135	%	12.05.19 05:45
o-Terphenyl	147	**	130		70-135	%	12.05.19 05:45

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109456

MB Sample Id: 7691695-1-BLK

Matrix: Solid

LCS Sample Id: 7691695-1-BKS

Prep Method: SW5030B

Date Prep: 12.04.19

LCSD Sample Id: 7691695-1-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	0.0976	98	70-130	2	35	mg/kg	12.04.19 22:35	
Toluene	<0.00200	0.100	0.0986	99	0.0958	96	70-130	3	35	mg/kg	12.04.19 22:35	
Ethylbenzene	<0.00200	0.100	0.0960	96	0.0930	93	71-129	3	35	mg/kg	12.04.19 22:35	
m,p-Xylenes	<0.000754	0.200	0.198	99	0.192	96	70-135	3	35	mg/kg	12.04.19 22:35	
o-Xylene	<0.00200	0.100	0.0975	98	0.0948	95	71-133	3	35	mg/kg	12.04.19 22:35	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		101		102		70-130	%	12.04.19 22:35
4-Bromofluorobenzene	97		101		99		70-130	%	12.04.19 22:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109456

Parent Sample Id: 645001-001

Matrix: Soil

MS Sample Id: 645001-001 S

Prep Method: SW5030B

Date Prep: 12.04.19

MSD Sample Id: 645001-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.100	101	0.0314	31	70-130	104	35	mg/kg	12.04.19 23:10	XF
Toluene	<0.00198	0.0992	0.0980	99	0.0369	37	70-130	91	35	mg/kg	12.04.19 23:10	XF
Ethylbenzene	<0.00198	0.0992	0.0961	97	0.0392	39	71-129	84	35	mg/kg	12.04.19 23:10	XF
m,p-Xylenes	<0.00397	0.198	0.199	101	0.0804	40	70-135	85	35	mg/kg	12.04.19 23:10	XF
o-Xylene	<0.00198	0.0992	0.0979	99	0.0438	44	71-133	76	35	mg/kg	12.04.19 23:10	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		95		70-130	%	12.04.19 23:10
4-Bromofluorobenzene	103		116		70-130	%	12.04.19 23:10

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: 16451016

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

www.xenco.com

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
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:	ymather@ltenv.com, dmoir@ltenv.com

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

Project Name:	Remuda Basin State #2	Turn Around:	
Project Number:	Q12918133	Routine	☒
P.O. Number:	Eddy County	Rush:	
Sampler's Name:	William Mather	Due Date:	

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

10/10/2019 10:54 AM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed

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
 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 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 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>	12/4/19 15:30			

Analytical Report 655697

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin State #002

012918133

16-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



16-MAR-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **655697**

Remuda Basin State #002

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 655697. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 655697 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 655697****LT Environmental, Inc., Arvada, CO**

Remuda Basin State #002

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	03-12-20 12:20	4 ft	655697-001
FS02	S	03-12-20 12:30	4 ft	655697-002
SW01	S	03-12-20 11:30	0 - 4 ft	655697-003
SW02	S	03-12-20 12:10	0 - 4 ft	655697-004



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin State #002

Project ID: 012918133

Work Order Number(s): 655697

Report Date: 16-MAR-20

Date Received: 03/13/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3119634 BTEX by EPA 8021B

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



Certificate of Analysis Summary 655697

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin State #002

Project Id: 012918133

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-13-20 03:40 pm

Report Date: 16-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	655697-001	655697-002	655697-003	655697-004		
	<i>Field Id:</i>	FS01	FS02	SW01	SW02		
	<i>Depth:</i>	4- ft	4- ft	0-4 ft	0-4 ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Mar-12-20 12:20	Mar-12-20 12:30	Mar-12-20 11:30	Mar-12-20 12:10		
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-13-20 18:00	Mar-13-20 18:00	Mar-13-20 18:00	Mar-13-20 18:00		
	<i>Analyzed:</i>	Mar-14-20 02:47	Mar-14-20 03:07	Mar-14-20 03:28	Mar-14-20 03:48		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198		
Toluene		<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198		
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198		
m,p-Xylenes		<0.00403 0.00403	<0.00404 0.00404	<0.00402 0.00402	<0.00396 0.00396		
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198		
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198		
Total BTEX		<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198		
Chloride by EPA 300	<i>Extracted:</i>	Mar-13-20 19:03	Mar-13-20 19:03	Mar-13-20 19:03	Mar-13-20 19:03		
	<i>Analyzed:</i>	Mar-13-20 20:49	Mar-13-20 20:55	Mar-13-20 21:12	Mar-13-20 21:18		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		882 9.98	593 10.1	198 10.1	442 10.1		
TPH by SW8015 Mod	<i>Extracted:</i>	Mar-13-20 18:30	Mar-13-20 18:30	Mar-13-20 18:30	Mar-13-20 18:30		
	<i>Analyzed:</i>	Mar-13-20 23:09	Mar-13-20 23:29	Mar-13-20 23:49	Mar-14-20 00:10		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.0 50.0		
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.0 50.0		
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.0 50.0		
Total TPH		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.0 50.0		

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

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 655697

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS01**
Lab Sample Id: 655697-001

Matrix: Soil
Date Collected: 03.12.20 12.20

Date Received: 03.13.20 15.40
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3119637

Date Prep: 03.13.20 19.03

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	882	9.98	mg/kg	03.13.20 20.49		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119703

Date Prep: 03.13.20 18.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.13.20 23.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.13.20 23.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.13.20 23.09	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.13.20 23.09	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.13.20 23.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	03.13.20 23.09	
o-Terphenyl	84-15-1	104	%	70-135	03.13.20 23.09	



Certificate of Analytical Results 655697

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS01**
Lab Sample Id: 655697-001

Matrix: Soil
Date Collected: 03.12.20 12.20

Date Received: 03.13.20 15.40
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3119634

Date Prep: 03.13.20 18.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.14.20 02.47	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.14.20 02.47	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.14.20 02.47	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.14.20 02.47	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.14.20 02.47	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.14.20 02.47	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.14.20 02.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	03.14.20 02.47		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.14.20 02.47		



Certificate of Analytical Results 655697

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS02**
Lab Sample Id: 655697-002

Matrix: Soil
Date Collected: 03.12.20 12.30

Date Received: 03.13.20 15.40
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3119637

Date Prep: 03.13.20 19.03

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	593	10.1	mg/kg	03.13.20 20.55		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119703

Date Prep: 03.13.20 18.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.13.20 23.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.13.20 23.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.13.20 23.29	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.13.20 23.29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.13.20 23.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	03.13.20 23.29	
o-Terphenyl	84-15-1	102	%	70-135	03.13.20 23.29	



Certificate of Analytical Results 655697

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS02**
Lab Sample Id: 655697-002

Matrix: Soil
Date Collected: 03.12.20 12.30

Date Received: 03.13.20 15.40
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3119634

Date Prep: 03.13.20 18.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.14.20 03.07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.14.20 03.07	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.14.20 03.07	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	03.14.20 03.07	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.14.20 03.07	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.14.20 03.07	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.14.20 03.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	03.14.20 03.07		
1,4-Difluorobenzene	540-36-3	109	%	70-130	03.14.20 03.07		



Certificate of Analytical Results 655697

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW01**
Lab Sample Id: 655697-003

Matrix: Soil
Date Collected: 03.12.20 11.30

Date Received: 03.13.20 15.40
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3119637

Date Prep: 03.13.20 19.03

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	198	10.1	mg/kg	03.13.20 21.12		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119703

Date Prep: 03.13.20 18.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.13.20 23.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.13.20 23.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.13.20 23.49	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.13.20 23.49	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.13.20 23.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	03.13.20 23.49	
o-Terphenyl	84-15-1	107	%	70-135	03.13.20 23.49	



Certificate of Analytical Results 655697

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW01**
Lab Sample Id: 655697-003

Matrix: Soil
Date Collected: 03.12.20 11.30

Date Received: 03.13.20 15.40
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.13.20 18.00

Basis: Wet Weight

Seq Number: 3119634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.14.20 03.28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.14.20 03.28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.14.20 03.28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.14.20 03.28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.14.20 03.28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.14.20 03.28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.14.20 03.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.14.20 03.28		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.14.20 03.28		



Certificate of Analytical Results 655697

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW02**
Lab Sample Id: 655697-004

Matrix: Soil
Date Collected: 03.12.20 12.10

Date Received: 03.13.20 15.40
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3119637

Date Prep: 03.13.20 19.03

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	442	10.1	mg/kg	03.13.20 21.18		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119703

Date Prep: 03.13.20 18.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.14.20 00.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.14.20 00.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.14.20 00.10	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.14.20 00.10	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.14.20 00.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	03.14.20 00.10	
o-Terphenyl	84-15-1	103	%	70-135	03.14.20 00.10	



Certificate of Analytical Results 655697

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW02**
Lab Sample Id: 655697-004

Matrix: Soil
Date Collected: 03.12.20 12.10

Date Received: 03.13.20 15.40
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.13.20 18.00

Basis: Wet Weight

Seq Number: 3119634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.14.20 03.48	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.14.20 03.48	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.14.20 03.48	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	03.14.20 03.48	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.14.20 03.48	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.14.20 03.48	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.14.20 03.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.14.20 03.48		
1,4-Difluorobenzene	540-36-3	105	%	70-130	03.14.20 03.48		



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

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.

Remuda Basin State #002

Analytical Method: Chloride by EPA 300

Seq Number: 3119637

MB Sample Id: 7698873-1-BLK

Matrix: Solid

LCS Sample Id: 7698873-1-BKS

Prep Method: E300P

Date Prep: 03.13.20

LCSD Sample Id: 7698873-1-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	260	104	260	104	90-110	0	20	mg/kg	03.13.20 20:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3119637

Parent Sample Id: 655695-001

Matrix: Soil

MS Sample Id: 655695-001 S

Prep Method: E300P

Date Prep: 03.13.20

MSD Sample Id: 655695-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	462	200	674	106	675	107	90-110	0	20	mg/kg	03.13.20 20:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3119637

Parent Sample Id: 655702-003

Matrix: Soil

MS Sample Id: 655702-003 S

Prep Method: E300P

Date Prep: 03.13.20

MSD Sample Id: 655702-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	13.5	200	228	107	226	106	90-110	1	20	mg/kg	03.13.20 21:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119703

MB Sample Id: 7698918-1-BLK

Matrix: Solid

LCS Sample Id: 7698918-1-BKS

Prep Method: SW8015P

Date Prep: 03.13.20

LCSD Sample Id: 7698918-1-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	982	98	962	96	70-135	2	35	mg/kg	03.13.20 14:25	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1060	106	70-135	1	35	mg/kg	03.13.20 14:25	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		115		105		70-135	%	03.13.20 14:25
o-Terphenyl	97		107		106		70-135	%	03.13.20 14:25

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119703

Matrix: Solid

MB Sample Id: 7698918-1-BLK

Prep Method: SW8015P

Date Prep: 03.13.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.13.20 15:05	

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

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

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.

Remuda Basin State #002

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119703

Parent Sample Id: 655684-001

Matrix: Soil

MS Sample Id: 655684-001 S

Prep Method: SW8015P

Date Prep: 03.13.20

MSD Sample Id: 655684-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	849	85	878	88	70-135	3	35	mg/kg	03.13.20 18:03	
Diesel Range Organics (DRO)	88.1	1000	936	85	946	86	70-135	1	35	mg/kg	03.13.20 18:03	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		105		70-135	%	03.13.20 18:03
o-Terphenyl	99		99		70-135	%	03.13.20 18:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3119634

MB Sample Id: 7698870-1-BLK

Matrix: Solid

LCS Sample Id: 7698870-1-BKS

Prep Method: SW5030B

Date Prep: 03.13.20

LCSD Sample Id: 7698870-1-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	0.109	109	0.107	107	70-130	2	35	mg/kg	03.13.20 23:23	
Toluene	<0.00200	0.100	0.105	105	0.102	102	70-130	3	35	mg/kg	03.13.20 23:23	
Ethylbenzene	<0.00200	0.100	0.0998	100	0.0963	96	71-129	4	35	mg/kg	03.13.20 23:23	
m,p-Xylenes	<0.00400	0.200	0.206	103	0.199	100	70-135	3	35	mg/kg	03.13.20 23:23	
o-Xylene	<0.00200	0.100	0.104	104	0.100	100	71-133	4	35	mg/kg	03.13.20 23:23	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		109		70-130	%	03.13.20 23:23
4-Bromofluorobenzene	94		95		92		70-130	%	03.13.20 23:23

Analytical Method: BTEX by EPA 8021B

Seq Number: 3119634

Parent Sample Id: 655684-001

Matrix: Soil

MS Sample Id: 655684-001 S

Prep Method: SW5030B

Date Prep: 03.13.20

MSD Sample Id: 655684-001 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	0.100	0.111	111	0.0966	97	70-130	14	35	mg/kg	03.14.20 00:03	
Toluene	<0.00201	0.100	0.102	102	0.0892	90	70-130	13	35	mg/kg	03.14.20 00:03	
Ethylbenzene	<0.00201	0.100	0.0981	98	0.0865	87	71-129	13	35	mg/kg	03.14.20 00:03	
m,p-Xylenes	<0.00402	0.201	0.201	100	0.177	89	70-135	13	35	mg/kg	03.14.20 00:03	
o-Xylene	<0.00201	0.100	0.103	103	0.0905	91	71-133	13	35	mg/kg	03.14.20 00:03	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	03.14.20 00:03
4-Bromofluorobenzene	91		95		70-130	%	03.14.20 00:03

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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

Chain of Custody

Work Order No:

655697

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com, kkennedy@ltenv.com

Program: UST/PST	☐ PRP	☐ Brownfields	☐ RRC	☐ Superfund
State of Project:				
Reporting Level: I	☐ Level II	☐ Level III	☐ ST/UST	☐ RRP
Deliverables: EDD	☐	ADAPT	☐	Other:

ANALYSIS REQUEST

Work Order Notes

Project Name:	Remuda Basin State #002	Turn Around	
Project Number:	D12918133	Routine	☐
P.O. Number:		Rush: Y/N	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	1.6	Thermometer ID				
Received Intact:	Yes	No	Correction Factor:			-0.2
Cooler Custody Seals:	Yes	No	Total Containers:			4
Sample Custody Seals:	Yes	No				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
-----------------------	--------	--------------	--------------	-------

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

Sample Comments

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

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

for Lo

Received by: (Signature)

3/13/20 15:40

2

4

6

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.13.2020 03.40.00 PM

Work Order #: 655697

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T--NM-007

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

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

Analyst:

PH Device/Lot#:

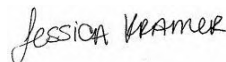
Checklist completed by:



Elizabeth McClellan

Date: 03.13.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.16.2020

Analytical Report 655779

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin State #002

012918133

17-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



17-MAR-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **655779**

Remuda Basin State #002

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 655779. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 655779 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 655779****LT Environmental, Inc., Arvada, CO**

Remuda Basin State #002

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS03	S	03-12-20 12:40	4 ft	655779-001
FS04	S	03-13-20 11:20	4 ft	655779-002
FS05	S	03-13-20 12:25	4 ft	655779-003
FS06	S	03-13-20 13:15	4 ft	655779-004
FS07	S	03-13-20 13:40	4 ft	655779-005
SW03	S	03-13-20 11:00	0 - 4 ft	655779-006
SW04	S	03-13-20 11:40	0 - 4 ft	655779-007
SW05	S	03-13-20 12:10	0 - 4 ft	655779-008
SW06	S	03-13-20 13:35	0 - 4 ft	655779-009

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Remuda Basin State #002**Project ID: 012918133
Work Order Number(s): 655779Report Date: 17-MAR-20
Date Received: 03/16/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3119914 BTEX by EPA 8021B

Lab Sample ID 655779-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, m,p-Xylenes recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene, Toluene, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 655779-001, -002, -003, -004, -005, -006, -007, -008, -009.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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

Batch: LBA-3119919 Chloride by EPA 300

Lab Sample ID 655779-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 655779-001, -002, -003, -004, -005, -006, -007, -008, -009.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 655779

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin State #002

Project Id: 012918133

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Mar-16-20 12:34 pm

Report Date: 17-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	655779-001	655779-002	655779-003	655779-004	655779-005	655779-006
	<i>Field Id:</i>	FS03	FS04	FS05	FS06	FS07	SW03
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	4- ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-12-20 12:40	Mar-13-20 11:20	Mar-13-20 12:25	Mar-13-20 13:15	Mar-13-20 13:40	Mar-13-20 11:00
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-16-20 21:00	Mar-16-20 21:00	Mar-16-20 21:00	Mar-16-20 21:00	Mar-16-20 21:00	Mar-16-20 21:00
	<i>Analyzed:</i>	Mar-16-20 22:09	Mar-16-20 22:29	Mar-16-20 22:50	Mar-16-20 23:10	Mar-16-20 23:31	Mar-16-20 23:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00397 0.00397	<0.00401 0.00401	<0.00398 0.00398	<0.00402 0.00402	<0.00399 0.00399	<0.00400 0.00400
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Mar-16-20 20:00	Mar-16-20 20:00	Mar-16-20 20:00	Mar-16-20 20:00	Mar-16-20 20:00	Mar-16-20 20:00
	<i>Analyzed:</i>	Mar-16-20 21:18	Mar-16-20 21:38	Mar-16-20 21:44	Mar-16-20 21:51	Mar-16-20 21:57	Mar-16-20 22:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1380 X 10.0	794 49.4	662 49.9	2250 50.1	<10.1 10.1	147 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	Mar-16-20 16:00	Mar-16-20 16:00	Mar-16-20 16:00	Mar-16-20 16:00	Mar-16-20 16:00	Mar-16-20 16:00
	<i>Analyzed:</i>	Mar-16-20 16:56	Mar-16-20 17:17	Mar-16-20 17:37	Mar-16-20 17:57	Mar-16-20 18:38	Mar-16-20 18:59
	<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)		<49.9 49.9	<50.2 50.2	<49.8 49.8	<49.8 49.8	<49.8 49.8	<49.8 49.8
Diesel Range Organics (DRO)		54.8 49.9	<50.2 50.2	<49.8 49.8	<49.8 49.8	51.4 49.8	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.2 50.2	<49.8 49.8	<49.8 49.8	<49.8 49.8	<49.8 49.8
Total GRO-DRO		54.8 49.9	<50.2 50.2	<49.8 49.8	<49.8 49.8	51.4 49.8	<49.8 49.8
Total TPH		54.8 49.9	<50.2 50.2	<49.8 49.8	<49.8 49.8	51.4 49.8	<49.8 49.8

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

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 655779

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin State #002

Project Id: 012918133

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Mar-16-20 12:34 pm

Report Date: 17-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	655779-007	655779-008	655779-009			
	<i>Field Id:</i>	SW04	SW05	SW06			
	<i>Depth:</i>	0-4 ft	0-4 ft	0-4 ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Mar-13-20 11:40	Mar-13-20 12:10	Mar-13-20 13:35			
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-16-20 21:00	Mar-16-20 21:00	Mar-16-20 21:00			
	<i>Analyzed:</i>	Mar-17-20 00:11	Mar-17-20 00:32	Mar-17-20 00:52			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198			
Toluene		<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198			
Ethylbenzene		<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198			
m,p-Xylenes		<0.00398 0.00398	<0.00403 0.00403	<0.00397 0.00397			
o-Xylene		<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198			
Total Xylenes		<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198			
Total BTEX		<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198			
Chloride by EPA 300	<i>Extracted:</i>	Mar-16-20 20:00	Mar-16-20 20:00	Mar-16-20 20:00			
	<i>Analyzed:</i>	Mar-16-20 22:22	Mar-16-20 22:28	Mar-16-20 22:34			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		209 9.92	467 9.98	120 10.0			
TPH by SW8015 Mod	<i>Extracted:</i>	Mar-16-20 16:00	Mar-16-20 16:00	Mar-16-20 16:00			
	<i>Analyzed:</i>	Mar-16-20 19:19	Mar-16-20 19:40	Mar-16-20 20:00			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<49.9 49.9	<50.2 50.2			
Diesel Range Organics (DRO)		<50.3 50.3	<49.9 49.9	<50.2 50.2			
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<49.9 49.9	<50.2 50.2			
Total GRO-DRO		<50.3 50.3	<49.9 49.9	<50.2 50.2			
Total TPH		<50.3 50.3	<49.9 49.9	<50.2 50.2			

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

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS03**
Lab Sample Id: 655779-001

Matrix: Soil
Date Collected: 03.12.20 12.40

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: JUM

Analyst: MAB

Seq Number: 3119919

Date Prep: 03.16.20 20.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1380	10.0	mg/kg	03.16.20 21.18	X	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119850

Date Prep: 03.16.20 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.16.20 16.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	54.8	49.9	mg/kg	03.16.20 16.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.16.20 16.56	U	1
Total GRO-DRO	PHC628	54.8	49.9	mg/kg	03.16.20 16.56		1
Total TPH	PHC635	54.8	49.9	mg/kg	03.16.20 16.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	03.16.20 16.56	
o-Terphenyl	84-15-1	114	%	70-135	03.16.20 16.56	



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS03**
Lab Sample Id: 655779-001

Matrix: Soil
Date Collected: 03.12.20 12.40

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JUM

Analyst: MAB

Seq Number: 3119914

Date Prep: 03.16.20 21.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.16.20 22.09	UX	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.16.20 22.09	UX	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.16.20 22.09	UX	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	03.16.20 22.09	UX	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.16.20 22.09	UX	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.16.20 22.09	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.16.20 22.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.16.20 22.09		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.16.20 22.09		



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS04**
Lab Sample Id: 655779-002

Matrix: Soil
Date Collected: 03.13.20 11.20

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: JUM

Analyst: MAB

Seq Number: 3119919

Date Prep: 03.16.20 20.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	794	49.4	mg/kg	03.16.20 21.38		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119850

Date Prep: 03.16.20 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.16.20 17.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.16.20 17.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.16.20 17.17	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.16.20 17.17	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.16.20 17.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	03.16.20 17.17	
o-Terphenyl	84-15-1	125	%	70-135	03.16.20 17.17	



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS04**
Lab Sample Id: 655779-002

Matrix: Soil
Date Collected: 03.13.20 11.20

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JUM

Analyst: MAB

Seq Number: 3119914

Date Prep: 03.16.20 21.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.16.20 22.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.16.20 22.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.16.20 22.29	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.16.20 22.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.16.20 22.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.16.20 22.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.16.20 22.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.16.20 22.29		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.16.20 22.29		



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS05**
Lab Sample Id: 655779-003

Matrix: Soil
Date Collected: 03.13.20 12.25

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: JUM

Analyst: MAB

Seq Number: 3119919

Date Prep: 03.16.20 20.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	662	49.9	mg/kg	03.16.20 21.44		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119850

Date Prep: 03.16.20 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.16.20 17.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.16.20 17.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.16.20 17.37	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	03.16.20 17.37	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.16.20 17.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.16.20 17.37	
o-Terphenyl	84-15-1	104	%	70-135	03.16.20 17.37	



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS05**
Lab Sample Id: 655779-003

Matrix: Soil
Date Collected: 03.13.20 12.25

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JUM

Analyst: MAB

Seq Number: 3119914

Date Prep: 03.16.20 21.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.16.20 22.50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.16.20 22.50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.16.20 22.50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.16.20 22.50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.16.20 22.50	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.16.20 22.50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.16.20 22.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.16.20 22.50		
4-Bromofluorobenzene	460-00-4	95	%	70-130	03.16.20 22.50		



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS06**
Lab Sample Id: 655779-004

Matrix: Soil
Date Collected: 03.13.20 13.15

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: JUM

Analyst: MAB

Seq Number: 3119919

Date Prep: 03.16.20 20.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2250	50.1	mg/kg	03.16.20 21.51		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119850

Date Prep: 03.16.20 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.16.20 17.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.16.20 17.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.16.20 17.57	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	03.16.20 17.57	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.16.20 17.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	03.16.20 17.57	
o-Terphenyl	84-15-1	117	%	70-135	03.16.20 17.57	



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS06**
Lab Sample Id: 655779-004

Matrix: Soil
Date Collected: 03.13.20 13.15

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JUM

Analyst: MAB

Seq Number: 3119914

Date Prep: 03.16.20 21.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.16.20 23.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.16.20 23.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.16.20 23.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.16.20 23.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.16.20 23.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.16.20 23.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.16.20 23.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.16.20 23.10		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.16.20 23.10		



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS07**
Lab Sample Id: 655779-005

Matrix: Soil
Date Collected: 03.13.20 13.40

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: JUM

Analyst: MAB

Seq Number: 3119919

Date Prep: 03.16.20 20.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	03.16.20 21.57	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119850

Date Prep: 03.16.20 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.16.20 18.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	51.4	49.8	mg/kg	03.16.20 18.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.16.20 18.38	U	1
Total GRO-DRO	PHC628	51.4	49.8	mg/kg	03.16.20 18.38		1
Total TPH	PHC635	51.4	49.8	mg/kg	03.16.20 18.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	03.16.20 18.38	
o-Terphenyl	84-15-1	103	%	70-135	03.16.20 18.38	



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **FS07**
Lab Sample Id: 655779-005

Matrix: Soil
Date Collected: 03.13.20 13.40

Date Received: 03.16.20 12.34
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JUM

Analyst: MAB

Seq Number: 3119914

Date Prep: 03.16.20 21.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.16.20 23.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.16.20 23.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.16.20 23.31	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.16.20 23.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.16.20 23.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.16.20 23.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.16.20 23.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.16.20 23.31		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.16.20 23.31		



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW03**
Lab Sample Id: 655779-006

Matrix: Soil
Date Collected: 03.13.20 11.00

Date Received: 03.16.20 12.34
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: JUM

Analyst: MAB

Seq Number: 3119919

Date Prep: 03.16.20 20.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	9.98	mg/kg	03.16.20 22.16		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119850

Date Prep: 03.16.20 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.16.20 18.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.16.20 18.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.16.20 18.59	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	03.16.20 18.59	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.16.20 18.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	03.16.20 18.59	
o-Terphenyl	84-15-1	111	%	70-135	03.16.20 18.59	



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW03**
Lab Sample Id: 655779-006

Matrix: Soil
Date Collected: 03.13.20 11.00

Date Received: 03.16.20 12.34
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JUM

Analyst: MAB

Seq Number: 3119914

Date Prep: 03.16.20 21.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.16.20 23.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.16.20 23.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.16.20 23.51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.16.20 23.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.16.20 23.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.16.20 23.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.16.20 23.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.16.20 23.51		
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.16.20 23.51		



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW04**
Lab Sample Id: 655779-007

Matrix: Soil
Date Collected: 03.13.20 11.40

Date Received: 03.16.20 12.34
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: JUM

Analyst: MAB

Seq Number: 3119919

Date Prep: 03.16.20 20.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	209	9.92	mg/kg	03.16.20 22.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119850

Date Prep: 03.16.20 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	03.16.20 19.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	03.16.20 19.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	03.16.20 19.19	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	03.16.20 19.19	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	03.16.20 19.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	03.16.20 19.19	
o-Terphenyl	84-15-1	111	%	70-135	03.16.20 19.19	



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW04**
Lab Sample Id: 655779-007

Matrix: Soil
Date Collected: 03.13.20 11.40

Date Received: 03.16.20 12.34
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JUM

Analyst: MAB

Seq Number: 3119914

Date Prep: 03.16.20 21.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.17.20 00.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.17.20 00.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.17.20 00.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.17.20 00.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.17.20 00.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.17.20 00.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.17.20 00.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.17.20 00.11		
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.17.20 00.11		



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW05**
Lab Sample Id: 655779-008

Matrix: Soil
Date Collected: 03.13.20 12.10

Date Received: 03.16.20 12.34
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: JUM

Analyst: MAB

Seq Number: 3119919

Date Prep: 03.16.20 20.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	467	9.98	mg/kg	03.16.20 22.28		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119850

Date Prep: 03.16.20 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.16.20 19.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.16.20 19.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.16.20 19.40	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.16.20 19.40	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.16.20 19.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	03.16.20 19.40	
o-Terphenyl	84-15-1	99	%	70-135	03.16.20 19.40	



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW05**
Lab Sample Id: 655779-008

Matrix: Soil
Date Collected: 03.13.20 12.10

Date Received: 03.16.20 12.34
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JUM

Analyst: MAB

Seq Number: 3119914

Date Prep: 03.16.20 21.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.17.20 00.32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.17.20 00.32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.17.20 00.32	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.17.20 00.32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.17.20 00.32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.17.20 00.32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.17.20 00.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.17.20 00.32		
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.17.20 00.32		



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW06**
Lab Sample Id: 655779-009

Matrix: Soil
Date Collected: 03.13.20 13.35

Date Received: 03.16.20 12.34
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: JUM

Analyst: MAB

Seq Number: 3119919

Date Prep: 03.16.20 20.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	120	10.0	mg/kg	03.16.20 22.34		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3119850

Date Prep: 03.16.20 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.16.20 20.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.16.20 20.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.16.20 20.00	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.16.20 20.00	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.16.20 20.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	03.16.20 20.00	
o-Terphenyl	84-15-1	115	%	70-135	03.16.20 20.00	



Certificate of Analytical Results 655779

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **SW06**
Lab Sample Id: 655779-009

Matrix: Soil
Date Collected: 03.13.20 13.35

Date Received: 03.16.20 12.34
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JUM

Analyst: MAB

Seq Number: 3119914

Date Prep: 03.16.20 21.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.17.20 00.52	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.17.20 00.52	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.17.20 00.52	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	03.17.20 00.52	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.17.20 00.52	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.17.20 00.52	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.17.20 00.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.17.20 00.52		
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.17.20 00.52		



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda Basin State #002

Analytical Method: Chloride by EPA 300

Seq Number: 3119919

MB Sample Id: 7699007-1-BLK

Matrix: Solid

LCS Sample Id: 7699007-1-BKS

Prep Method: E300P

Date Prep: 03.16.20

LCSD Sample Id: 7699007-1-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	262	105	258	103	90-110	2	20	mg/kg	03.16.20 19:12	

Analytical Method: Chloride by EPA 300

Seq Number: 3119919

Parent Sample Id: 655779-001

Matrix: Soil

MS Sample Id: 655779-001 S

Prep Method: E300P

Date Prep: 03.16.20

MSD Sample Id: 655779-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1380	198	1670	146	1640	130	90-110	2	20	mg/kg	03.16.20 21:25	X

Analytical Method: Chloride by EPA 300

Seq Number: 3119919

Parent Sample Id: 655867-001

Matrix: Soil

MS Sample Id: 655867-001 S

Prep Method: E300P

Date Prep: 03.16.20

MSD Sample Id: 655867-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	190	200	398	104	398	104	90-110	0	20	mg/kg	03.16.20 22:53	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119850

MB Sample Id: 7698975-1-BLK

Matrix: Solid

LCS Sample Id: 7698975-1-BKS

Prep Method: SW8015P

Date Prep: 03.16.20

LCSD Sample Id: 7698975-1-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	811	81	778	78	70-135	4	35	mg/kg	03.16.20 13:31	
Diesel Range Organics (DRO)	<50.0	1000	896	90	853	85	70-135	5	35	mg/kg	03.16.20 13:31	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	82		98		105		70-135	%	03.16.20 13:31
o-Terphenyl	89		98		93		70-135	%	03.16.20 13:31

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119850

Matrix: Solid
MB Sample Id: 7698975-1-BLK

Prep Method: SW8015P

Date Prep: 03.16.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.16.20 13:10	

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

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

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.

Remuda Basin State #002

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119850

Parent Sample Id: 655734-008

Matrix: Soil

MS Sample Id: 655734-008 S

Prep Method: SW8015P

Date Prep: 03.16.20

MSD Sample Id: 655734-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	1000	100	1030	103	70-135	3	35	mg/kg	03.16.20 14:32	
Diesel Range Organics (DRO)	<50.1	1000	1110	111	1140	114	70-135	3	35	mg/kg	03.16.20 14:32	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		114		70-135	%	03.16.20 14:32
o-Terphenyl	121		119		70-135	%	03.16.20 14:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3119914

MB Sample Id: 7699005-1-BLK

Matrix: Solid

LCS Sample Id: 7699005-1-BKS

Prep Method: SW5030B

Date Prep: 03.16.20

LCSD Sample Id: 7699005-1-BSO

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	0.101	101	70-130	0	35	mg/kg	03.16.20 20:07	
Toluene	<0.00200	0.100	0.101	101	0.0974	97	70-130	4	35	mg/kg	03.16.20 20:07	
Ethylbenzene	<0.00200	0.100	0.101	101	0.0937	94	71-129	7	35	mg/kg	03.16.20 20:07	
m,p-Xylenes	<0.00400	0.200	0.210	105	0.194	97	70-135	8	35	mg/kg	03.16.20 20:07	
o-Xylene	<0.00200	0.100	0.105	105	0.0965	97	71-133	8	35	mg/kg	03.16.20 20:07	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		106		108		70-130	%	03.16.20 20:07
4-Bromofluorobenzene	94		97		93		70-130	%	03.16.20 20:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3119914

Parent Sample Id: 655779-001

Matrix: Soil

MS Sample Id: 655779-001 S

Prep Method: SW5030B

Date Prep: 03.16.20

MSD Sample Id: 655779-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.0740	75	0.0615	62	70-130	18	35	mg/kg	03.16.20 20:47	X
Toluene	<0.00198	0.0990	0.0709	72	0.0590	59	70-130	18	35	mg/kg	03.16.20 20:47	X
Ethylbenzene	<0.00198	0.0990	0.0658	66	0.0553	55	71-129	17	35	mg/kg	03.16.20 20:47	X
m,p-Xylenes	<0.00396	0.198	0.136	69	0.114	57	70-135	18	35	mg/kg	03.16.20 20:47	X
o-Xylene	<0.00198	0.0990	0.0710	72	0.0580	58	71-133	20	35	mg/kg	03.16.20 20:47	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		107		70-130	%	03.16.20 20:47
4-Bromofluorobenzene	94		97		70-130	%	03.16.20 20:47

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:

10597-79

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

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com, kkenmedy@ltenv.com

Project Name:	Remediation State # 002	Turn Around	
Project Number:	012818133	Routine	☐
P.O. Number:		Rush: 24h	☐
Sampler's Name:	Spencer Lo	Due Date:	
SAMPLE RECEIPT			
Temperature (°C):	1.60C	Temp Blank:	☒ Yes ☐ No
Received Intact:	☒ Yes ☐ No	Thermometer ID	T-NM-007
Cooler Custody Seals:	☒ Yes ☐ No	Correction Factor:	-0.2
Sample Custody Seals:	☒ Yes ☐ No	Total Containers:	9

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers													Work Order Notes
					TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)											
FS03	S	3-12-20	1240	4'	X	X	X											TAT starts the day received by the lab, if received by 4:30pm
FS04		3-13-20	1120	4'														
FS05			1225	4'														Sample Comments
FS06			1315	4'														
FS07			1340	2'														
SW03			1100	0-4'														
SW04			1140	0-4'														
SW05			1210	0-4'														
SW06			1335	0-4'														

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed 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
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>	03/14/2020 @ 1225	<i>[Signature]</i>	<i>[Signature]</i>	12:30
		4			03/16/20
		6			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.16.2020 12.34.00 PM

Work Order #: 655779

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

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

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

Analyst:

PH Device/Lot#:

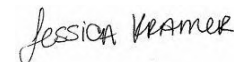
Checklist completed by:



Elizabeth McClellan

Date: 03.16.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.17.2020

Analytical Report 656034

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin State #002

012918123

19-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



19-MAR-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **656034**

Remuda Basin State #002

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 656034. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 656034 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 656034****LT Environmental, Inc., Arvada, CO**

Remuda Basin State #002

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	03-17-20 12:35	0.5 ft	656034-001
BH01A	S	03-17-20 12:45	1 ft	656034-002
BH02	S	03-17-20 12:55	0.5 ft	656034-003
BH02A	S	03-17-20 13:05	1 ft	656034-004
BH03	S	03-17-20 13:20	0.5 ft	656034-005
BH03A	S	03-17-20 13:30	1 ft	656034-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin State #002

Project ID: 012918123

Work Order Number(s): 656034

Report Date: 19-MAR-20

Date Received: 03/18/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3120167 BTEX by EPA 8021B

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



Certificate of Analysis Summary 656034

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin State #002

Project Id: 012918123

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Mar-18-20 08:38 am

Report Date: 19-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	656034-001	656034-002	656034-003	656034-004	656034-005	656034-006
	<i>Field Id:</i>	BH01	BH01A	BH02	BH02A	BH03	BH03A
	<i>Depth:</i>	0.5- ft	1- ft	0.5- ft	1- ft	0.5- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-17-20 12:35	Mar-17-20 12:45	Mar-17-20 12:55	Mar-17-20 13:05	Mar-17-20 13:20	Mar-17-20 13:30
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-18-20 11:00	Mar-18-20 11:00	Mar-18-20 11:00	Mar-18-20 11:00	Mar-18-20 11:00	Mar-18-20 11:00
	<i>Analyzed:</i>	Mar-18-20 13:46	Mar-18-20 14:06	Mar-18-20 14:26	Mar-18-20 14:47	Mar-18-20 15:07	Mar-18-20 15:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00403 0.00403	<0.00397 0.00397	<0.00402 0.00402	<0.00402 0.00402	<0.00396 0.00396	<0.00400 0.00400
o-Xylene		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Mar-18-20 10:00	Mar-18-20 10:00	Mar-18-20 10:00	Mar-18-20 10:00	Mar-18-20 10:00	Mar-18-20 10:00
	<i>Analyzed:</i>	Mar-18-20 13:49	Mar-18-20 13:56	Mar-18-20 14:22	Mar-18-20 14:28	Mar-18-20 14:33	Mar-18-20 14:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6180 50.3	3580 49.7	4740 49.9	4300 50.1	6640 49.8	6630 49.9
TPH by SW8015 Mod	<i>Extracted:</i>	Mar-18-20 14:50	Mar-18-20 13:50	Mar-18-20 13:50	Mar-18-20 13:50	Mar-18-20 13:50	Mar-18-20 16:30
	<i>Analyzed:</i>	Mar-18-20 15:04	Mar-18-20 16:05	Mar-18-20 16:25	Mar-18-20 16:05	Mar-18-20 16:25	Mar-18-20 16:46
	<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)		<49.9 49.9	<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.2 50.2
Diesel Range Organics (DRO)		<49.9 49.9	<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.2 50.2
Total GRO-DRO		<49.9 49.9	<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.2 50.2
Total TPH		<49.9 49.9	<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.2 50.2

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH01**
Lab Sample Id: 656034-001

Matrix: Soil
Date Collected: 03.17.20 12.35

Date Received: 03.18.20 08.38
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120104

Date Prep: 03.18.20 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6180	50.3	mg/kg	03.18.20 13.49		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120220

Date Prep: 03.18.20 14.50

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.18.20 15.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.18.20 15.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.18.20 15.04	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.18.20 15.04	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.18.20 15.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	03.18.20 15.04	
o-Terphenyl	84-15-1	109	%	70-135	03.18.20 15.04	



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH01**
Lab Sample Id: 656034-001

Matrix: Soil
Date Collected: 03.17.20 12.35

Date Received: 03.18.20 08.38
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MRB

Date Prep: 03.18.20 11.00

Basis: Wet Weight

Seq Number: 3120167

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.18.20 13.46	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.18.20 13.46	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.18.20 13.46	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.18.20 13.46	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.18.20 13.46	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.18.20 13.46	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.18.20 13.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.18.20 13.46		
1,4-Difluorobenzene	540-36-3	118	%	70-130	03.18.20 13.46		



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH01A**
Lab Sample Id: 656034-002

Matrix: Soil
Date Collected: 03.17.20 12.45

Date Received: 03.18.20 08.38
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120104

Date Prep: 03.18.20 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3580	49.7	mg/kg	03.18.20 13.56		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120217

Date Prep: 03.18.20 13.50

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	03.18.20 16.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	03.18.20 16.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	03.18.20 16.05	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	03.18.20 16.05	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	03.18.20 16.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.18.20 16.05	
o-Terphenyl	84-15-1	108	%	70-135	03.18.20 16.05	



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH01A**
Lab Sample Id: 656034-002

Matrix: Soil
Date Collected: 03.17.20 12.45

Date Received: 03.18.20 08.38
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MRB

Date Prep: 03.18.20 11.00

Basis: Wet Weight

Seq Number: 3120167

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.18.20 14.06	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.18.20 14.06	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.18.20 14.06	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	03.18.20 14.06	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.18.20 14.06	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.18.20 14.06	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.18.20 14.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.18.20 14.06		
1,4-Difluorobenzene	540-36-3	118	%	70-130	03.18.20 14.06		



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH02**
Lab Sample Id: 656034-003

Matrix: Soil
Date Collected: 03.17.20 12.55

Date Received: 03.18.20 08.38
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120104

Date Prep: 03.18.20 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4740	49.9	mg/kg	03.18.20 14.22		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120217

Date Prep: 03.18.20 13.50

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	03.18.20 16.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	03.18.20 16.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	03.18.20 16.25	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	03.18.20 16.25	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	03.18.20 16.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	03.18.20 16.25	
o-Terphenyl	84-15-1	114	%	70-135	03.18.20 16.25	



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH02**
Lab Sample Id: 656034-003

Matrix: Soil
Date Collected: 03.17.20 12.55

Date Received: 03.18.20 08.38
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MRB

Seq Number: 3120167

Date Prep: 03.18.20 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.18.20 14.26	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.18.20 14.26	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.18.20 14.26	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.18.20 14.26	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.18.20 14.26	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.18.20 14.26	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.18.20 14.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.18.20 14.26		
4-Bromofluorobenzene	460-00-4	92	%	70-130	03.18.20 14.26		



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH02A**
Lab Sample Id: 656034-004

Matrix: Soil
Date Collected: 03.17.20 13.05

Date Received: 03.18.20 08.38
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120104

Date Prep: 03.18.20 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4300	50.1	mg/kg	03.18.20 14.28		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120220

Date Prep: 03.18.20 13.50

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.18.20 16.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.18.20 16.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.18.20 16.05	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.18.20 16.05	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.18.20 16.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	03.18.20 16.05	
o-Terphenyl	84-15-1	106	%	70-135	03.18.20 16.05	



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH02A**
Lab Sample Id: 656034-004

Matrix: Soil
Date Collected: 03.17.20 13.05

Date Received: 03.18.20 08.38
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MRB

Seq Number: 3120167

Date Prep: 03.18.20 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.18.20 14.47	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.18.20 14.47	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.18.20 14.47	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.18.20 14.47	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.18.20 14.47	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.18.20 14.47	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.18.20 14.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.18.20 14.47		
1,4-Difluorobenzene	540-36-3	116	%	70-130	03.18.20 14.47		



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH03**
Lab Sample Id: 656034-005

Matrix: Soil
Date Collected: 03.17.20 13.20

Date Received: 03.18.20 08.38
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120104

Date Prep: 03.18.20 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6640	49.8	mg/kg	03.18.20 14.33		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120220

Date Prep: 03.18.20 13.50

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.18.20 16.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.18.20 16.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.18.20 16.25	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.18.20 16.25	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.18.20 16.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	03.18.20 16.25	
o-Terphenyl	84-15-1	103	%	70-135	03.18.20 16.25	



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH03**
Lab Sample Id: 656034-005

Matrix: Soil
Date Collected: 03.17.20 13.20

Date Received: 03.18.20 08.38
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MRB

Seq Number: 3120167

Date Prep: 03.18.20 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.18.20 15.07	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.18.20 15.07	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.18.20 15.07	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	03.18.20 15.07	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.18.20 15.07	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.18.20 15.07	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.18.20 15.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	116	%	70-130	03.18.20 15.07		
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.18.20 15.07		



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH03A**
Lab Sample Id: 656034-006

Matrix: Soil
Date Collected: 03.17.20 13.30

Date Received: 03.18.20 08.38
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120104

Date Prep: 03.18.20 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6630	49.9	mg/kg	03.18.20 14.39		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120220

Date Prep: 03.18.20 16.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.18.20 16.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.18.20 16.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.18.20 16.46	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.18.20 16.46	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.18.20 16.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	03.18.20 16.46	
o-Terphenyl	84-15-1	106	%	70-135	03.18.20 16.46	



Certificate of Analytical Results 656034

LT Environmental, Inc., Arvada, CO

Remuda Basin State #002

Sample Id: **BH03A**
Lab Sample Id: 656034-006

Matrix: Soil
Date Collected: 03.17.20 13.30

Date Received: 03.18.20 08.38
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MRB

Seq Number: 3120167

Date Prep: 03.18.20 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.18.20 15.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.18.20 15.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.18.20 15.28	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.18.20 15.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.18.20 15.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.18.20 15.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.18.20 15.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	117	%	70-130	03.18.20 15.28		
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.18.20 15.28		



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda Basin State #002

Analytical Method: Chloride by EPA 300

Seq Number: 3120104

MB Sample Id: 7699133-1-BLK

Matrix: Solid

LCS Sample Id: 7699133-1-BKS

Prep Method: E300P

Date Prep: 03.18.20

LCSD Sample Id: 7699133-1-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	260	104	261	104	90-110	0	20	mg/kg	03.18.20 12:43	

Analytical Method: Chloride by EPA 300

Seq Number: 3120104

Parent Sample Id: 656011-025

Matrix: Soil

MS Sample Id: 656011-025 S

Prep Method: E300P

Date Prep: 03.18.20

MSD Sample Id: 656011-025 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	84.3	399	509	106	504	105	90-110	1	20	mg/kg	03.18.20 13:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3120104

Parent Sample Id: 656011-028

Matrix: Soil

MS Sample Id: 656011-028 S

Prep Method: E300P

Date Prep: 03.18.20

MSD Sample Id: 656011-028 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	55.3	198	261	104	262	104	90-110	0	20	mg/kg	03.18.20 14:10	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120217

MB Sample Id: 7699257-1-BLK

Matrix: Solid

LCS Sample Id: 7699257-1-BKS

Prep Method: SW8015P

Date Prep: 03.18.20

LCSD Sample Id: 7699257-1-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	829	83	761	76	70-135	9	35	mg/kg	03.18.20 14:23	
Diesel Range Organics (DRO)	<50.0	1000	905	91	835	84	70-135	8	35	mg/kg	03.18.20 14:23	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		111		102		70-135	%	03.18.20 14:23
o-Terphenyl	98		98		92		70-135	%	03.18.20 14:23

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

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

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.

Remuda Basin State #002

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120220

MB Sample Id: 7699259-1-BLK

Matrix: Solid

LCS Sample Id: 7699259-1-BKS

Prep Method: SW8015P

Date Prep: 03.18.20

LCSD Sample Id: 7699259-1-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	1010	101	961	96	70-135	5	35	mg/kg	03.18.20 14:23	
Diesel Range Organics (DRO)	<50.0	1000	1080	108	1030	103	70-135	5	35	mg/kg	03.18.20 14:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		120		116		70-135	%	03.18.20 14:23
o-Terphenyl	107		112		107		70-135	%	03.18.20 14:23

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120217

Matrix: Solid

MB Sample Id: 7699257-1-BLK

Prep Method: SW8015P

Date Prep: 03.18.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.18.20 14:02	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120220

Matrix: Solid

MB Sample Id: 7699259-1-BLK

Prep Method: SW8015P

Date Prep: 03.18.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.18.20 14:02	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120217

Matrix: Soil

Parent Sample Id: 656032-001

MS Sample Id: 656032-001 S

Prep Method: SW8015P

Date Prep: 03.18.20

MSD Sample Id: 656032-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	995	850	85	966	97	70-135	13	35	mg/kg	03.18.20 15:24	
Diesel Range Organics (DRO)	<49.8	995	928	93	1070	107	70-135	14	35	mg/kg	03.18.20 15:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		115		70-135	%	03.18.20 15:24
o-Terphenyl	108		123		70-135	%	03.18.20 15:24

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.

Remuda Basin State #002

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120220

Parent Sample Id: 656034-001

Matrix: Soil

MS Sample Id: 656034-001 S

Prep Method: SW8015P

Date Prep: 03.18.20

MSD Sample Id: 656034-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	922	92	950	95	70-135	3	35	mg/kg	03.18.20 15:24	
Diesel Range Organics (DRO)	<50.2	1000	1020	102	1040	104	70-135	2	35	mg/kg	03.18.20 15:24	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		120		70-135	%	03.18.20 15:24
o-Terphenyl	115		115		70-135	%	03.18.20 15:24

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120167

MB Sample Id: 7699151-1-BLK

Matrix: Solid

LCS Sample Id: 7699151-1-BKS

Prep Method: SW5030B

Date Prep: 03.18.20

LCSD Sample Id: 7699151-1-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	0.111	111	0.118	118	70-130	6	35	mg/kg	03.18.20 11:43	
Toluene	<0.00200	0.100	0.102	102	0.107	107	70-130	5	35	mg/kg	03.18.20 11:43	
Ethylbenzene	<0.00200	0.100	0.0954	95	0.0996	100	71-129	4	35	mg/kg	03.18.20 11:43	
m,p-Xylenes	<0.00400	0.200	0.186	93	0.194	97	70-135	4	35	mg/kg	03.18.20 11:43	
o-Xylene	<0.00200	0.100	0.0917	92	0.0979	98	71-133	7	35	mg/kg	03.18.20 11:43	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		107		111		70-130	%	03.18.20 11:43
4-Bromofluorobenzene	88		80		86		70-130	%	03.18.20 11:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120167

Parent Sample Id: 656032-001

Matrix: Soil

MS Sample Id: 656032-001 S

Prep Method: SW5030B

Date Prep: 03.18.20

MSD Sample Id: 656032-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.128	129	0.122	122	70-130	5	35	mg/kg	03.18.20 12:24	
Toluene	<0.00199	0.0994	0.116	117	0.110	110	70-130	5	35	mg/kg	03.18.20 12:24	
Ethylbenzene	<0.00199	0.0994	0.107	108	0.100	100	71-129	7	35	mg/kg	03.18.20 12:24	
m,p-Xylenes	<0.00398	0.199	0.209	105	0.195	98	70-135	7	35	mg/kg	03.18.20 12:24	
o-Xylene	<0.00199	0.0994	0.105	106	0.0992	99	71-133	6	35	mg/kg	03.18.20 12:24	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		111		70-130	%	03.18.20 12:24
4-Bromofluorobenzene	87		90		70-130	%	03.18.20 12:24

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

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

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 (813-382-7550)

Chain of Custody

Work Order No: 696034

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:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slo@ltenv.com , dmoir@ltenv.com , kkennedy@ltenv.com

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

Project Name:	Remuda Basin state #002	Turn Around
Project Number:	012918123	Routine ☐
P.O. Number:		Rush: 244
Sampler's Name:	Spencer Lo	Due Date:

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):		2.2			Thermometer ID		
Received Intact:		Yes	No		7111007		
Cooler Custody Seals:		Yes	No		N/A	Correction Factor:	-0.7
Sample Custody Seals:		Yes	No		N/A	Total Containers:	6

[illegible]

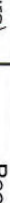
Total 200.7 / 6010 200.8 / 6020:

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 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 to Xenco. 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
		3/18/20 6:00am			3/18/20 08:38

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.18.2020 08.38.00 AM

Work Order #: 656034

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

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

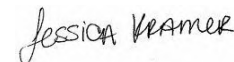
Checklist completed by:



Elizabeth McClellan

Date: 03.18.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.18.2020