

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

Advancing Opportunity

December 4, 2019

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

RE: Deferral Request WPX Energy Permian, Inc. Remediation Permit Number 2RP-5649 RDX Federal 17 #035H Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of WPX Energy Permian, Inc. (WPX), presents the following Deferral Request detailing soil sampling and excavation activities at the RDX Federal 17 #035H (Site) in Unit D, Section 17, Township 26 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following an event that resulted in the release of produced water to the pipeline right-of-way south of the well pad. Based on the excavation activities and results of the soil sampling events, XTO is submitting this Deferral Request, describing remediation that has occurred and requesting to leave impacted soil in the top 4 feet near active production equipment in place until final reclamation.

BACKGROUND

On September 8, 2019, a check valve failed resulting in the release of 10 barrels (bbls) of produced water to the pipeline right-of-way surface south of the well pad. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 4 bbls of produced water were recovered. WPX reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on September 16, 2019, and was assigned Remediation Permit (RP) Number 2RP-5649 (Attachment 1).

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on known aquifer properties and the elevation difference between the Site and an identified water well. The nearest permitted water well with depth to water data is C 01360, located approximately 6,153 feet north of the Site. Water well C 01360 has a reported





depth to water of 173 feet bgs and is approximately 23 feet higher in elevation than the Site. The closest significant watercourse to the Site is a dry arroyo located approximately 1,225 feet north of the Site. The Site is greater than 300 feet from any 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 an unstable area, 100-year floodplain, or overlying a subsurface mine. The Site is located in a medium-potential karst area.

Based on these criteria, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and 20,000 mg/kg chloride. However, the top 4 feet of the release area is to be reclaimed immediately and therefore the reclamation standard of 600 mg/kg is being applied to the top 4 feet of impacted material.

PRELIMINARY SOIL SAMPLING

On September 9, 2019, LTE personnel inspected the Site to evaluate the release extent. LTE personnel collected one preliminary soil sample (SS01) within the release extent from a depth of approximately 0.5 feet bgs to assess soil impacts. The release extent and preliminary soil sample location were mapped using a handheld Global Positing System (GPS) unit and are depicted on Figure 2. The soil sample was 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.

Based on visible surface staining and laboratory analytical results for preliminary soil sample SS01, excavation of impacted soil was warranted. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

DELINEATION AND EXCAVATION SOIL SAMPLING

On September 13, 2019, three potholes (PH01 through PH03) were advanced within the release area. Using excavation equipment, potholes were advanced to depths ranging from 4 feet bgs in PH03 to 7 feet bgs in PH02. The 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 °C under strict COC procedures to Xenco in Midland, Texas, for analysis of chloride following USEPA Method 300.0. Pothole PH03 was limited in depth due to the presence of the 12-inch concrete water line that was identified in the northern portion of the release area. The line is owned by Solaris Water Midstream, LLC (Solaris).





Upon the discovery of the line, Solaris notified LTE that no ground disturbing activities could occur within 15 feet of the line without a representative on site. The pothole locations are depicted on Figure 2. Soil Sampling Logs are included as Attachment 3.

From November 21 through 26, 2019, LTE was on site to oversee excavation activities within the release area. Excavation activities were directed by field screening soil samples for volatile aromatic hydrocarbons using a photo-ionization detector (PID) and chloride using Hach[®] chloride QuanTab[®] test strips. The extents of the excavations were limited due to safety concerns associated with the Solaris 12-inch water line, surface poly lines, and sub surface pipelines. Following completion of excavation activities, 5-point composite confirmation soil samples were collected from the floor (samples labeled as "FS") and sidewalls (samples labeled as "SW") of the excavation areas. Each soil sample represented at most 200 square feet. Approximately 275 cubic yards of impacted soil were removed from the excavation area and transported to the R360 Red Bluff Facility in Orla, Texas for disposal. The excavation areas measured a total of approximately 1,600 square feet in area and ranged in depth from 2 feet to 4 feet bgs in depth. The excavation area to the north near the Solaris water line was dictated by a Solaris representative, who was on site. The Solaris representative did not allow the excavation to advance deeper than 2 feet bgs. The excavation area and soil sample locations are depicted on Figure 3.

Additionally, on November 26, 2019, six potholes (PH04 through PH09) were advanced to delineate the lateral extent of remaining soil impacts. Using excavation equipment, potholes were advanced to a depth of 4 feet bgs. Soil samples were collected from each pothole at depths of 0.5 feet bgs and from 4 feet bgs. Soil samples were handled and analyzed as previously stated. The pothole locations are depicted on Figure 2. Soil Sampling Logs are included as Attachment 3.

ANALYTICAL RESULTS

Laboratory analytical results indicated that the preliminary soil sample SS01 was compliant with the Closure Criteria but exceeded 600 mg/kg for chloride concentration in the top four feet. Impacted soil was excavated to the extent possible as allowed by the Solaris representative and health and safety protocol. Laboratory analytical results indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in all excavation sidewall and floor samples. However, laboratory analytical results indicated that chloride concentrations in excavation samples FS06 through FS09, SW01, SW02, and SW04 that were collected less than 4 feet bgs exceeded the BLM preferred chloride closure criteria.

Further excavation of impacted soil beyond excavation samples FS06 through FS09, SW01, SW02, and SW04 was limited by the presence of above ground and subsurface active pipelines. Safety policy restricted soil disturbing activities around active production equipment and pipelines. This safety policy is established to protect workers and reduce the likelihood of compromising the foundation of the production equipment or pipelines.





Laboratory analytical results for the delineation soil samples collected from potholes indicate BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria and 600 mg/kg chloride in the top four feet of the subsurface. Therefore, no further excavation was warranted in the pipeline right-of-way. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

CONCLUSIONS

A total of approximately 275 cubic yards of impacted soil were excavated from the Site; however, impacted soil exceeding the reclamation standard of 600 mg/kg chloride in the top 4 feet of the subsurface was left in place for compliance with the safety policy regarding earth moving activities near active pipelines. Impacted soil was excavated to the extent possible. The impacted soil remaining in place is delineated vertically and laterally by potholes PH01 through PH09. An estimated 410 cubic yards of impacted soil remain in place between 0 feet and 4 feet bgs based on excavation confirmation and delineation soil samples that were compliant with the NMOCD Table 1 Closure Criteria and the reclamation standard.

WPX requests to backfill the existing excavations and complete remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. LTE and WPX do not believe deferment will result in imminent risk to human health, the environment, or groundwater. WPX requests deferral of final remediation permit number 2RP-5649. Upon approval of this deferral request, WPX will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1.

If you have any questions or comments, please do not hesitate to contact Mr. Chris McKisson at (970) 285-9985 or <u>cmckisson@ltenv.com</u>.

Sincerely,

LT ENVIRONMENTAL, INC.

Chris McKisson Project Environmental Scientist

cc: Jim Raley, WPX

Robert Hamlet, NMOCD Victoria Venegas, NMOCD Jim Amos, BLM

Ashley L. ager

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





Attachments:

- Figure 1 Site Location Map
- Figure 2 Site Map
- Figure 3 Excavation Soil Sample Locations
- Table 1Soil Analytical Results
- Attachment 1 Form C-141
- Attachment 2 Photographic Log
- Attachment 3 Soil Sampling Logs
- Attachment 4 Laboratory Analytical Reports



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FIGURES









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TABLE



TABLE 1 SOIL ANALYTICAL RESULTS

RDX Federal 17 #035H REMEDIATION PERMIT NUMBER 2RP-5649 EDDY COUNTY, NEW MEXICO WPX ENERGY PERMIAN, 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)	MRO (mg/kg)	Sum of GRO + DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	09/09/2019	0.00444	0.0252	0.00394	0.0738	0.107	43.4	63.4	<24.9	107	107	13,800*
PH01	2	09/13/2019	< 0.00101	<0.00101	< 0.00101	< 0.00101	<0.00101	<25.0	<25.0	<25.0	<25.0	<25.0	691*
PH01A	4	09/13/2019	-	-	-	-	-	-	-	-	-	-	938*
PH01B	6	09/13/2019	-	-	-	-	-	-	-	-	-		73.4*
PH02	2	09/13/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<24.9	<24.9	<24.9	<24.9	<24.9	890*
PH02A	5	09/13/2019	-	-	-	-	-	-	-	-	-	-	308*
PH02B	7	09/13/2019	-	-	-	-	-	-	-	-	-	-	109*
PH03	2	09/13/2019	-	-	-	-	-	-	-	-	-		6,830*
PH03A	4	09/13/2019	-	-	-	-	-	-	-	-	-	-	4,670*
PH04	0.5	11/26/2019	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	186*
PH04A	4	11/26/2019	< 0.00200	<0.00200	< 0.00200	< 0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	13.6*
PH05	0.5	11/26/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	36.3*
PH05A	4	11/26/2019	<0.00200	<0.00200	< 0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	11.5*
PH06	0.5	11/26/2019	<0.00199	<0.00199	< 0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	<10.0*
PH06A	4	11/26/2019	< 0.00202	<0.00202	<0.00202	< 0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	73.6*
PH07	0.5	11/26/2019	< 0.00202	<0.00202	< 0.00202	< 0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	<9.82*
PH07A	4	11/26/2019	< 0.00202	<0.00202	< 0.00202	< 0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	17.3*
PH08	0.5	11/26/2019	< 0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	14.0*
PH08A	4	11/26/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	54.3*
PH09	0.5	11/26/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<49.8	<49.8	<49.8	<49.8	<49.8	50.6*
PH09A	4	11/26/2019	<0.00196	<0.00196	<0.00196	< 0.00196	<0.00196	<49.8	<49.8	<49.8	<49.8	<49.8	73.1*
FS01	4	11/21/2019	< 0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	1,200*
FS02	4	11/21/2019	<0.00199	<0.00199	<0.00199	< 0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	807*
FS03	4	11/26/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	2,100*
FS04	4	11/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	894*
FS05	4	11/26/2019	<0.00199	<0.00199	<0.00199	< 0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	1,160*
FS06	0.5 - 2	11/26/2019	< 0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	15,800*
FS07	0.5 - 2	11/26/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<50.0	<50.0	<50.0	<50.0	<50.0	9,250*
FS08	0.5 - 2	11/26/2019	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	5,600*
FS09	0.5 - 2	11/26/2019	< 0.00201	<0.00201	< 0.00201	< 0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	7,540*
SW01	0.5 - 4	11/26/2019	< 0.00202	< 0.00202	<0.00202	<0.00202	< 0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	1,930*
SW02	0.5 - 4	11/26/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	1,040*
SW03	0.5 - 4	11/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	103*
SW04	0.5 - 4	11/26/2019	< 0.00201	< 0.00201	< 0.00201	< 0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	1,080*
NMOCD Table	e 1 Closure Crit	eria	10	NE	NE	NE	50	NE	NE	NE	1.000	2.500	20.000

Notes:

bgs - below ground surface BTEX - benzene, toluene, ethylbenzene, and total xylenes mg/kg - miligrams per kilogram NE - not established NMOCD - New Mexico Oil Conservation Division - not analyzed DRO - diesel range organics GRO - gasoline range organics ORO - oil range organics TPH - total petroleum hydrocarbons < - indicates result is below laboratory reporting limits

Bold- indicates result exceeds the applicable regulatory

standard * - indicates sample was collected in area to be reclaimed after remediation is complete; closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018 NMAC -New Mexico Administrative Code

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ATTACHMENT 1: FORM C-141



District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	NAB1928154373
District RP	2RP-5649
Facility ID	
Application ID	pAB1928154046

Release Notification

I9KF0-190916-C-1410

Responsible Party

Responsible Party: WPX Energy Permian, LLC.	OGRID: 246289			
Contact Name: Jim Raley	Contact Telephone: 575-689-7597			
Contact email: james.raley@wpxenergy.com	Incident # (assigned by OCD) NAB1928154373			
Contact mailing address: 5315 Buena Vista Dr., Carlsbad, NM 88220				

Location of Release Source

Latitude 32.0492796

Longitude -103.909725 (NAD 83 in decimal degrees to 5 decimal places)

Site Name: RDX FEDERAL 17 #035H	Site Type: Production Facility
Date Release Discovered: 9/8/2019	API# (if applicable): 30-015-43884

Unit Letter	Section	Township	Range	County
D	17	26S	30E	Eddy

Surface Owner: State Federal Tribal Private (Name: Bureau of Land Management_____)

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) 10	Volume Recovered (bbls) 4		
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	Yes No		
Condensate	Volume Released (bbls)	Volume Recovered (bbls)		
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)		
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)		
Cause of Release: Check which 4bbls was recovered	valve on produced water line header failed, allowing reed. No waterways were threatened nor public health end	elease of 10 bbls of produced water on pipeline ROW, of dangered.		

Form C-141	State of New Mexico	Incident ID	NAB1928154373
Page 2	Oil Conservation Division	District RP	2RP-5649
		Facility ID	
		Application ID	pAB1928154046

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?
🗌 Yes 🖾 No	
If YES, was immediate n	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Initial Response

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

 \square The source of the release has been stopped.

The impacted area has been secured to protect human health and the environment.

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

All free liquids and recoverable materials have been removed and managed appropriately.

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

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

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

Printed Name: Jim Raley

Signature:

email: james.raley@wpxenergy.com

Title: Environmental Specialist

Date: 9/16/2019

Telephone: 575-689-7597

OCD Only

Received	by:	Amal
Received	DV:	

lia Bustamante

Date: 10/7/2019

Form C-141 Page 3

State of New Mexico **Oil Conservation Division**

Incident ID	
District RP	2RP-5649
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Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>>100</u> (ft bgs)		
Did this release impact groundwater or surface water?			
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
- \boxtimes Data table of soil contaminant concentration data
- \square Depth to water determination
- Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- \boxtimes Boring or excavation logs
- \square Photographs including date and GIS information
- \boxtimes Topographic/Aerial maps
- Laboratory data including chain of custody

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

Form C-141		State of New Mexico		Incident ID		٦
Pa	age 4	Oil Conservation Division		District RP	2RP-5649	٦
				Facility ID		
				Application ID		
regulations all operators are required to report and/or file certain release noti public health or the environment. The acceptance of a C-141 report by the C failed to adequately investigate and remediate contamination that pose a thre addition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.		cations and perform CD does not relieve t to groundwater, su esponsibility for con	corrective actions for release the operator of liability sho rface water, human health apliance with any other fed	ases which may endanger ould their operations have or the environment. In leral, state, or local laws		
	Printed Name: Jim Raley		Title:	Environmental Speci	ialist	
	Signature: / in / hry		Date:	12/4/2019		
	email: / James.Ralev@	a)wpxenergy.com	Telephone:	575-689-7597		

email:

James.Raley@wpxenergy.com

OCD Only

Received by:

Date: _____

575-689-7597

Telephone:

Form C_{141}	State of New Marian			
1'01111 C-141		Incident ID		
Page 5	Oil Conservation Division	District RP	2RP-5649	
		Facility ID		
		Application ID		

Remediation Plan

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

Detailed description of proposed remediation technique

Scaled sitemap with GPS coordinates showing delineation points

Estimated volume of material to be remediated

Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC

Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

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

Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

Extents of contamination must be fully delineated.

Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Jim Raley	Title:	Environment	al Specialist
Signature:	Date:	12/4/2019	
email: James.Raley@wpxenergy.com	Telephone:	575-689-7597	
OCD Only			
Received by:	Date:		
Approved Approved with Attached Conditions of A	pproval	Denied	Deferral Approved
Signature: D	Date:		













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ATTACHMENT 3: SOIL SAMPLING LOGS



	0								Idantifian DII01	Data: 0/12/10
	2			LT Envi	ronment	al, Inc.			identiller: PHUI	Date: 9/13/19
LT Environn Advancing C	nental, Inc.		Ca	oux Wes rlsbad, N	st Steven New Mexi	s Street co 88220)		Project Name: RDX Federal 17-35	RP Number: 2RP-5649
2			Comp	iliance · E	ngineerin	g · Remedi	iation			
		LITHO	LOGIC	C / SOI	L SAMP	LING LO)G		Logged By: Lynda Laumbach	Method: Backhoe
Lat/Long:	Collector		_		Field Scree	ening: ride String (Low Ponce) & DID	Hole Diameter: N/A	Total Depth: 6 ft
Comment	s: N/C Fie	ld screenir	ıg not col	lected in th	ne field.	ride Suips (LOW Kalige) & FID		
*Chloride	results dis	splayed we	re analyz:	ed by a lab	>					
ure ent	ide n)	or n)	ing	le #	Depth	Sample	ock e			
Moist Cont	Chloi (ppr	Vap (pp1	stain	amp	(ft. bgs.)	Depth	oil/R Tyj		Lithology/Ren	marks
Z -	0		01	S			S			
					0	H				
					_					
					1	+				
						†				
					-	H				
DRY	691*	N/C	No	PH01	2	2 ft	Caliche	dry, light	tan well-cemented caliche w	ith a uniform, well-sorted
						+		sandy (m	.) matrix	
					-	‡]				
					3	+				
					_	<u>†</u>				
DRY	938*	N/C	No	PH01A	4	4 ft	Caliche	drv. light	tan moderately cemented ca	liche with a uniform.
DRI	250	100	NO	1 110 17 1			culture	well-sort	ed sandy (m.) matrix	,
					-	+				
					5	ŧ.				
						+				
					-	†				
DRY	73.4*	N/C	No	PH01B	6	6 ft	Caliche	dry, light well-sort	tan moderately cemented ca ed sandy (m.) matrix	lliche with a uniform,
					_	t i			TOT Depth	
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					12	V				

LT Environm	P nental, Inc.			LT Envi 508 Wes	ronment t Steven	t al, Inc. s Street	2		Identifier: PH02	Date: 9/13/19
			Ca. Comp	rlsbad, N liance · E	New Mexi Engineerin	ico 88220 g · Remedi) iation		Project Name: RDX Federal 17-35	RP Number: 2RP-5649
		LITHO	LOGIC		LSAMP	LINGLO)G		Logged By: Lynda Laumhach	Method: Backhoe
Lat/Long:	Collector			, , 5 0 1	Field Scre	ening:			Hole Diameter: N/A	Total Depth: 7 ft
Comments	s: N/C Fie	ld screenii	ng not col	lected in th	Hach Chlo	oride Strips (Low Range	e) & PID		
*Chloride	results di	splayed we	ere analyz	ed by a lab)	-	-	-		
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology/Rea	narks
DRY DRY DRY	890* 308* 109*	N/C N/C	No	PH02 PH02A PH02B		2 ft 5 ft	Caliche Caliche	dry, light sandy (m dry, light well-sort	tan well-cemented caliche w .) matrix tan moderately cemented ca ed sandy (m.) matrix	ith a uniform, well-sorted liche with a uniform,
					8 9 10 11 12			well-sort	ed sandy (m.) matrix TOT Depth	

LT Environmental, Inc.	LT Env 508 We Carlsbad, I Compliance · E	i ronment st Stevens New Mexi Engineering	al, Inc. s Street co 88220 g · Remedi) iation		Identifier: PH03 Project Name: RDX Federal 17-35	Date: 9/13/19 RP Number: 2RP-5649
LITH	DLOGIC / SOI	L SAMP	LING LO	DG		Logged By: Lynda Laumbach	Method: Backhoe
Lat/Long: Collector		Field Scree	ning:			Hole Diameter: N/A	Total Depth: 4 ft
Comments: N/C Field screen	ing not collected in t	Hach Chlo ne field.	ride Strips (Low Range	e) & PID		
*Chloride results displayed v	vere analyzed by a la	0					
Moisture Content Chloride (ppm) Vapor (ppm)	Staining Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology/Rer	narks
DRY 6830* N/C	No PH03 No PH03A	0 1 2 3 4 5 6 7 8 9 10 11	2 ft 4 ft	Caliche Caliche	dry, light sandy (m dry, light well-sort	tan well-cemented caliche w .) matrix tan moderately cemented ca ed sandy (m.) matrix TOT Depth	ith a uniform, well-sorted liche with a uniform,

LT Environn Kracov	Penental, Inc.		Cal Comp	LT Envi 508 Wes Isbad, N liance · E	ronment t Stevens lew Mexi	al, Inc. s Street co 88220 g · Remedi) iation		Identifier: PH04 Project Name: RDX Federal 17-35	Date: 11/26/19 RP Number: 2RP-5649
		LITHO	LOGIC	z / SOII	LSAMP	LING LO	DG		Logged By: Anna Byers	Method: Backhoe
Lat/Long:	Collector				Field Scree	ening:			Hole Diameter: N/A	Total Depth: 4 ft
Comment	s: Chlorid	e test perfo	rmed with	n 1 part so	Hach Chlo il and 4 par	ride Strips (ts distilled v	Low Range vater (dilut	e) & PID ion).		
	1					1	1	1		
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology/Ren	narks
DRY	<120	0	No	PH04	0	0.5 ft	SP-SM	dry, brow no odor,	vn poorly-graded sand (m.) wi trace organics	th silt; non-plastic,
DRY	<120	0	No		2	2 ft	Caliche	dry, light sandy (m	tan well-cemented caliche wi .) matrix	ith a uniform, well-sorted
DRY	172	0	No	PH04A	34	4 ft	Caliche	dry, light well-sort	tan moderately cemented ca ed sandy (m.) matrix TOT DEPTH	liche with a uniform,
					5 6 7 8 9 10 11					

	-								Idontifiam DI105	Data: 11/26/10
	2			LT Envi	ronmenta	l, Inc.			Identifier: PH05	Date: 11/26/19
LT Environi	nental, Inc.		Ca	rlsbad, N	New Mexic	sireet o 88220)		Project Name: RDX Federal 17-35	RP Number: 2RP-5649
Z			Comp	liance · E	ngineering	· Remed	iation			
		LITHO	LOGIC	C / SOI	L SAMPI	ING LO)G		Logged By: Anna Byers	Method: Backhoe
Lat/Long:	Collector				Field Screen	ning:			Hole Diameter: N/A	Total Depth: 4 ft
Comment	s: Chlorid	e test perfo	rmed with	1 nart soi	Hach Chlor	ide Strips (Low Range) & PID		
Comment	s. emorid	e test perio	inica witi	i i part soi	n and 4 parts	distince w		511).		
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology/Remarl	xs
					0					
DBV	~120	0	No	D1105	-	0.5 ft		dry brow	in poorly graded cand (m.) w	ith cilty non plactic
DKI	<120	0	NO	РПОЗ	-	0.5 ft	38-3101	no odor,	trace organics	itil siit, non-plastic,
					1	•		,		
					-					
DRY	<120	0	No		2	2. ft	Caliche	drv light	tan well-cemented calicbe w	ith a uniform
DRI	<120	0	NO			2 11	cancine	well-sort	ed sandy (m.) matrix	itira uniforni,
						<u> </u>				
					3	-				
					-	•				
					-			dry, light	tan moderately cemented ca	liche with a
DRY	<120	0	No	PH05A	4	4 ft	Caliche	uniform,	well-sorted sandy (m.) matrix	x
					-				TOT DEPTH	
					-	-				
					5					
					-	-				
					6	-				
					-					/
					_				/	
					7	_				
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					8					
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		LT Envi	ronmenta	al, Inc.			Identifier: PH06	Date: 11/26/19
	Ca	rlsbad, I	lew Mexic	co 88220)		Project Name: RDX Federal 17-35	RP Number: 2RP-5649
	Comp	liance · E	ingineering	r · Remedi	ation			
LITHO	LOGI	C / SOI	L SAMPI	LING LO)G		Logged By: Anna Byers	Method: Backhoe
r			Field Scree	ning:			Hole Diameter: N/A	Total Depth: 4 ft
le test perfo	rmed with	1 l part soi	Hach Chlor l and 4 parts	s distilled w	Low Range ater (dilutio) & PID on).		- <u></u>
- -						r		
Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology/Ren	narks
0	No	PH06	0	0.5 ft	SP-SM	dry, brow no odor, ⁻	n poorly-graded sand (m.) wi trace organics	th silt; non-plastic,
0	No		2	2 ft	Caliche	dry, light sandy (m	tan well-cemented caliche wi .) matrix	th a uniform, well-sorted
			3	-				
0	No	PH06A	4	4 ft	Caliche	dry, light well-sorte	tan moderately cemented cal ed sandy (m.) matrix	iche with a uniform,
							TOT DEPTH	
	LITHO r le test perfo	LITHOLOGIC r te test performed with a test	LT Envi 508 Wes Carlsbad, N Compliance - E LITHOLOGIC / SOII r te test performed with 1 part soi 0 No PH06 0 No PH06A	LT Environmenta 508 West Stevens Carlsbad, New Mexic Compliance - Engineering ILITHOLOGIC / SOIL SAMPI r Field Scree Hach Chlor le test performed with 1 part soil and 4 parts 10 (III.d.) 0 No PH06 1 0 No PH06 1 0 No PH06A 4 0 No PH06A 4 0 No PH06A 4 0 No PH06A 4 1 0 No PH06A 4 1 1 1 1 1 1 1 1 1 1 1 1 1	LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance - Engineering - Remedi IITHOLOGIC / SOIL SAMPLING LO r Field Screening: Hach Chloride Strips (1 te test performed with 1 part soil and 4 parts distilled w 0 No PH06 0 0.5 ft 1 0 0.5 ft	LT Environmental, Inc. Sol8 West Stevens Street Carlsbad, New Mexico 88220 Compliance - Engineering - Remediation ITHOLOGIC / SOL SAMPLING LOG r Field Screening: Hach Chloride Strips (Low Range te test performed with 1 part soil and 4 parts distilled water (diluted 0 0 No PH06 0 0.5 ft SP-SM 0 No PH06 0.5 ft SP-SM 0 No PH06 4 ft Caliche 0 No PH06A 4 ft Caliche 1 10 10 11 10 10 11 </td <td>LT Environmental, Inc. 508 West Stevens Street Carisbad, New Mexico 88220 Compliance - Engineering - Remediation ITHOLOGIC / SOIL SAMPLING LOG T Field Screening: Hach Chloride Strips (Low Range) & PID Let ext performed with 1 part soil and 4 parts distilled water (dilution). Do No PH06 0 0 5 ft SP-SM dry, brow, no odor, i 0 No PH06 2 2 ft Caliche dry, light sandy (m 0 No PH06 4 4 ft Caliche well-sorte 0 No PH06A 4 4 ft Caliche well-sorte 1 5 4 4 6 7 8 9 10 10 10 10 10 10 10 10 10 10</td> <td>LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 8820 Compliance : Engineering : Remediation LITHOLOGIC / SOIL SAMPLING LOG r Itel discreming: Head Chained Street (h. bgs.) Laged Ity: Anna Hyers bit of (0,0,0) 0 No PH06 1 0 No PH06 0 1 1 0 No PH06 0 1 1 0 No PH06 1 2 1 Callche 0 No PH06 1 2 1 Callche 0 No PH06 1 4 Callche dry, light tan well-cemented callche will sandy (m.) matrix 0 No PH06A 4 4 ft Callche 1 1 1 1 1 1 1</td>	LT Environmental, Inc. 508 West Stevens Street Carisbad, New Mexico 88220 Compliance - Engineering - Remediation ITHOLOGIC / SOIL SAMPLING LOG T Field Screening: Hach Chloride Strips (Low Range) & PID Let ext performed with 1 part soil and 4 parts distilled water (dilution). Do No PH06 0 0 5 ft SP-SM dry, brow, no odor, i 0 No PH06 2 2 ft Caliche dry, light sandy (m 0 No PH06 4 4 ft Caliche well-sorte 0 No PH06A 4 4 ft Caliche well-sorte 1 5 4 4 6 7 8 9 10 10 10 10 10 10 10 10 10 10	LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 8820 Compliance : Engineering : Remediation LITHOLOGIC / SOIL SAMPLING LOG r Itel discreming: Head Chained Street (h. bgs.) Laged Ity: Anna Hyers bit of (0,0,0) 0 No PH06 1 0 No PH06 0 1 1 0 No PH06 0 1 1 0 No PH06 1 2 1 Callche 0 No PH06 1 2 1 Callche 0 No PH06 1 4 Callche dry, light tan well-cemented callche will sandy (m.) matrix 0 No PH06A 4 4 ft Callche 1 1 1 1 1 1 1

1	P			LT Envi	ronmenta	al, Inc.			Identifier: PH07	Date: 11/26/19
LT Environ	mental, Inc.		Са	508 Wes Irlsbad, N	t Stevens Jew Mexic	Street)		Project Name: RDX Federal 17-35	RP Number: 2RP-5649
2	S TEARS		Comr	liance · F	naineerinc	· Remedi	ation			
	~	LITHO			SAMDI				Lagood Dyn Anno Dyong	Mathadi Daalibaa
Lat/Long	: Collector	LIIHO	LUGI	. 7 501	Field Scree	ning:	G		Hole Diameter: N/A	Total Depth: 4 ft
					Hach Chlor	ide Strips (Low Range	e) & PID		
Comment	ts: Chloride	e test perfo	rmed with	n 1 part soi	l and 4 parts	s distilled w	ater (dilutio	on).		
							<u> </u>			
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology/Re	marks
DRY	<120	0	No	PH07	0	0.5 ft	SP-SM	dry, brow no odor, 1	n poorly-graded sand (m.) wi trace organics	th silt; non-plastic,
DRY	<120	0	No		2	2 ft	Caliche	dry, light sandy (m	tan well-cemented caliche wi .) matrix	th a uniform, well-sorted
DRY	<120	0	No	PH07A	3 	- - 4 ft	Caliche	dry, light well-sorte	tan moderately cemented ca ed sandy (m.) matrix TOT DEPTH	iche with a uniform,
DRY	<120		No	PH07A	4 5 6 7 7 8 9 10 11 11 12		Caliche	well-sort	Ed sandy (m.) matrix TOT DEPTH	

									Identifier: PH08	Date: 11/26/19			
<u>J</u>	2			508 Was	ironmenta	al, Inc.							
LT Environn	nental, Inc.		Ca	arlsbad, I	Vew Mexic	co 88220)		Project Name: RDX Federal 17-35	RP Number: 2RP-5649			
Z			Comp	oliance · E	Engineering	· Remedi	iation						
		LITHO	LOGI	C / SOI	L SAMPI	LING LO)G		Logged By: Anna Byers	Method: Backhoe			
Lat/Long:	Collector				Field Scree	ning:			Hole Diameter: N/A	Total Depth: 4 ft			
					Hach Chlor	ide Strips (Low Range	e) & PID					
Comment	s: Chloride	e test perfo	ormed with	h 1 part so	il and 4 part	s distilled w	vater (dilutio	on).					
k + m + k + k + k + k + k + k + k + k +													
oistu onter	lorid ppm	⁷ apoi ppm	ainin	mple	Depth (ft_bgs_)	Sample	il/Ro Гype		Lithology/Ren	Lithology/Remarks			
ΧÖ	C	~)	St	Sa	(11. 055.)	II Depti	So						
					0	Ц							
DRY	<120	0	No	PH08	-	0.5 ft	SP-SM	dry, brow	n poorly-graded sand (m.) wi	th silt; non-plastic,			
						-		no odor,	trace organics				
					1 _	_							
					-	-							
					-	-							
DRY	<120	0	No		2	2 ft	Caliche	dry, light	tan well-cemented caliche wi	th a uniform, well-sorted			
					-	-		sandy (m	.) matrix				
					-	_							
					3	-							
					_	_							
					_								
DPV	<120	0	No	DLIOQA	4	dry, light tan moderately cemented caliche with a uniform,							
DKI	<120	0	NO	11100A	-	711	calicite	weii-soit	TOT DEPTH	/			
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LT Environ Kaacaa	mental, Inc.		Ca	LT Envi 508 Wes rlsbad, I	i ronmenta at Stevens New Mexic	al, Inc. Street co 88220)		Identifier: PH09 Project Name: RDX Federal 17-35	Date: 11/26/19 RP Number: 2RP-5649				
4			Comp	oliance · E	ngineering	· Remedi	iation							
		LITHO	LOGI	C / SOI	L SAMPI	LING LO)G		Logged By: Anna Byers	Method: Backhoe				
Lat/Long:	Collector				Field Scree	ning:			Hole Diameter: N/A	Total Depth: 4 ft				
Comment	s. Chloride	e test perfo	rmed with	h 1 part soi	Hach Chlor and 4 parts	ride Strips (Low Range	e) & PID						
					I		().						
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Roc k Type		Lithology/Rer	y/Remarks				
DRY	<120	0	No	РН09	0	0.5 ft	SP-SM	dry, brow no odor, '	n poorly-graded sand (m.) wi trace organics	th silt; non-plastic,				
DRY	<120	0	No		2	2 ft	Caliche	dry, light sandy (m	tan well-cemented caliche wi .) matrix	th a uniform, well-sorted				
DRY	<120	0	No	PH09A	3	- - - 4 ft	Caliche	dry, light well-sort	tan moderately cemented ca ed sandy (m.) matrix	liche with a uniform,				



Analytical Report 636391

for LT Environmental, Inc.

Project Manager: Chris McKisson

RDX 17-35

34819046

12-SEP-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142), North Carolina (681)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Tampa: Florida (E87429), North Carolina (483)



12-SEP-19

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

Reference: XENCO Report No(s): 636391 RDX 17-35 Project Address:

Chris McKisson:

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) 636391. 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. 636391 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Vermer

 Jessica Kramer

 Project Assistant

 Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies.

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

Sample Cross Reference 636391

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	09-09-19 10:50	0.5 ft	636391-001

•



CASE NARRATIVE

Client Name: LT Environmental, Inc. Project Name: RDX 17-35

Project ID: 34819046 Work Order Number(s): 636391

12-SEP-19 Report Date: Date Received: 09/10/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3101116 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3101140 TPH by SW8015 Mod

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

Samples affected are: 636389-001 S.



Project Id:34819046Contact:Chris McKisson

Project Location:

Certificate of Analysis Summary 636391

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-35

Date Received in Lab:Tue Sep-10-19 08:05 amReport Date:12-SEP-19Project Manager:Jessica Kramer

Lab	Id: 636391-001			
Field	Id: SS01			
Analysis Kequested De	<i>th:</i> 0.5- ft			
Mat	ix: SOIL			
Samp	ed: Sep-09-19 10:50			
BTEX by EPA 8021B Extrac	ed: Sep-10-19 10:09			
Analy	ed: Sep-10-19 15:20			
Units/	L: mg/kg RL			
Benzene	0.00444 0.00101			
Toluene	0.0252 0.00101			
Ethylbenzene	0.00394 0.00101			
m,p-Xylenes	0.0537 0.00202			
o-Xylene	0.0201 0.00101			
Total Xylenes	0.0738 0.00101			
Total BTEX	0.107 0.00101			
Chloride by EPA 300 Extrac	ed: Sep-10-19 10:09			
Analy	ed: Sep-10-19 16:27			
Units/	L: mg/kg RL			
Chloride	13800 D 498			
TPH by SW8015 Mod Extrac	ed: Sep-10-19 11:30			
Analy	ed: Sep-10-19 22:17			
Units/	L: mg/kg RL			
Gasoline Range Hydrocarbons (GRO)	43.4 24.9			
Diesel Range Organics (DRO)	63.4 24.9			
Motor Oil Range Hydrocarbons (MRO)	<24.9 24.9			
Total GRO-DRO	107 24.9			
Total TPH	107 24.9			

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

fession kramer

Jessica Kramer Project Assistant

Final 1.000



Certificate of Analytical Results 636391

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id: SS01		Matrix:	Soil		Date Received:09.10.19 08.05					
Lab Sample Id: 636391-001		Date Colle	ected: 09.09	.19 10.50		Sample Depth: 0.5 ft				
Analytical Method: Chloride by EPA	A 300					0P				
Tech: MAB						% Moisture:				
Analyst: MAB		Date Prep	: 09.10	.19 10.09		Basis: Wet	Weight			
Seq Number: 3101127										
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil		
Chloride	16887-00-6	13800	498		mg/kg	09.10.19 16.34	D	50		
Analytical Method: TPH by SW8015 Tech: DTH Analyst: DTH Seq Number: 3101140	5 Mod	Date Prep	: 09.10	.19 11.30		Prep Method: SW % Moisture: Basis: Wet	8015P t Weight			
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil		
Gasoline Range Hydrocarbons (GRO)	PHC610	43.4	24.9		mg/kg	09.10.19 22.17		1		
Diesel Range Organics (DRO)	C10C28DRO	63.4	24.9		mg/kg	09.10.19 22.17		1		
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9		mg/kg	09.10.19 22.17	U	1		
Total GRO-DRO	PHC628	107	24.9		mg/kg	09.10.19 22.17		1		
Total TPH	PHC635	107	24.9		mg/kg	09.10.19 22.17		1		
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag			
1-Chlorooctane		111-85-3	129	%	70-135	09.10.19 22.17				
o-Terphenyl		84-15-1	112	%	70-135	09.10.19 22.17				



Certificate of Analytical Results 636391

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id:	SS01		Matrix:	Soil		Date Received:09.1	0.19 08.05	
Lab Sample Id	: 636391-001		Date Colle	ected: 09.09.19 10.50		Sample Depth: 0.5	ft	
Analytical Me	thod: BTEX by EPA 80	21B				Prep Method: SW:	5030B	
Tech:	MAB					% Moisture:		
Analyst:	DTH		Date Prep	: 09.10.19 10.09		Basis: Wet	Weight	
Seq Number:	3101116							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene		71-43-2	0.00444	0.00101	mg/kg	09.10.19 15.20		1
Toluene		108-88-3	0.0252	0.00101	mg/kg	09.10.19 15.20		1

Toluene	108-88-3	0.0252	0.00101		mg/kg	09.10.19 15.20		1
Ethylbenzene	100-41-4	0.00394	0.00101		mg/kg	09.10.19 15.20		1
m,p-Xylenes	179601-23-1	0.0537	0.00202		mg/kg	09.10.19 15.20		1
o-Xylene	95-47-6	0.0201	0.00101		mg/kg	09.10.19 15.20		1
Total Xylenes	1330-20-7	0.0738	0.00101		mg/kg	09.10.19 15.20		1
Total BTEX		0.107	0.00101		mg/kg	09.10.19 15.20		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	114	%	70-130	09.10.19 15.20		
1,4-Difluorobenzene		540-36-3	122	%	70-130	09.10.19 15.20		

- 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 Clier	nt Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Laboration	atory 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.

RDX 17-35

Analytical Method:	Chloride by EPA 30)0						Pı	ep Metho	d: E3	300P	
Seq Number:	3101127]	Matrix:	Solid				Date Pre	p: 09	0.10.19	
MB Sample Id:	7685854-1-BLK		LCS San	nple Id:	7685854-2	1-BKS		LCS	D Sample	Id: 76	585854-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag

Analytical Method:	Chloride by	7 EPA 30	0						P	rep Metho	od: E3	90P	
Seq Number:	3101127]	Matrix:	Soil				Date Pr	ep: 09.	10.19	
Parent Sample Id:	636389-001			MS San	nple Id:	636389-00	01 S		MS	D Sample	e Id: 636	5389-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride		227	199	463	119	465	120	90-110	0	20	mg/kg	09.10.19 12:32	Х

Analytical Method:	Chloride by EPA 3	00						P	rep Metho	od: E30	OP	
Seq Number:	3101127			Matrix:	Solid				Date Pre	ep: 09.1	10.19	
Parent Sample Id:	636392-001		MS Sar	nple Id:	636392-00	01 S		MS	D Sample	e Id: 636	392-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	10600	4040	15500	121	15600	124	90-110	1	20	mg/kg	09.10.19 15:03	Х

Analytical Method:	TPH by S	W8015 M	od						F	Prep Method	i: SW	'8015P	
Seq Number:	3101140				Matrix:	Solid				Date Prep	o: 09.	10.19	
MB Sample Id:	7685918-1	I-BLK		LCS Sar	nple Id:	7685918-	1-BKS		LCS	SD Sample	ld: 768	5918-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	ons (GRO)	<25.0	1000	899	90	918	92	70-135	2	35	mg/kg	09.10.19 14:22	
Diesel Range Organics	(DRO)	<25.0	1000	843	84	855	86	70-135	1	35	mg/kg	09.10.19 14:22	
Surrogate		MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSI %Ree) LCS c Flag	D I g	Limits	Units	Analysis Date	
1-Chlorooctane		120		1	23		128		7	0-135	%	09.10.19 14:22	
o-Terphenyl		96		1	12		112		7	0-135	%	09.10.19 14:22	

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. RDX 17-35

Analytical Method:	od						P	rep Method	l: SW	8015P			
Seq Number:	3101140				Matrix:	Soil				Date Prep	o: 09.1	0.19	
Parent Sample Id:	636389-001			MS Sar	nple Id:	636389-0	01 S		MS	D Sample	ld: 636	389-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	<25.1	1010	1020	101	949	95	70-135	7	35	mg/kg	09.10.19 15:24	
Diesel Range Organics (DRO)	<25.1	1010	950	94	875	88	70-135	8	35	mg/kg	09.10.19 15:24	
Surrogate				N %	1S Rec	MS Flag	MSD %Rec	MSD c Flag	L	limits	Units	Analysis Date	
1-Chlorooctane				1	38	**	126		7	0-135	%	09.10.19 15:24	
o-Terphenyl				1	22		113		7	0-135	%	09.10.19 15:24	

Analytical Method:	BTEX by EPA 8021	IB							Prep Metho	d: SW	5030B		
Seq Number:	3101116		Matrix: Solid						Date Prep: 09.10.19				
MB Sample Id:	7685989-1-BLK		LCS Sar	nple Id:	7685989-1-BKS			LC	LCSD Sample Id: 7685989-1-BSD				
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI) RPD Limi	t Units	Analysis Date	Flag	
Benzene	< 0.00100	0.100	0.0787	79	0.0812	81	70-130	3	35	mg/kg	09.10.19 10:44		
Toluene	< 0.00100	0.100	0.0947	95	0.0953	95	70-130	1	35	mg/kg	09.10.19 10:44		
Ethylbenzene	< 0.00100	0.100	0.115	115	0.117	117	71-129	2	35	mg/kg	09.10.19 10:44		
m,p-Xylenes	< 0.00200	0.200	0.236	118	0.240	120	70-135	2	35	mg/kg	09.10.19 10:44		
o-Xylene	< 0.00100	0.100	0.118	118	0.122	122	71-133	3	35	mg/kg	09.10.19 10:44		
Surrogate	MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSD %Rec) LCS 2 Flag	D g	Limits	Units	Analysis Date		
1,4-Difluorobenzene	105		1	11		107			70-130	%	09.10.19 10:44		
4-Bromofluorobenzene	118		1	27		127			70-130	%	09.10.19 10:44		

Analytical Method: BTEX by EPA 8021B									Prep Meth	od: SW:	5030B	
Seq Number:	3101116			Matrix:	Soil				Date Pr	rep: 09.1	0.19	
Parent Sample Id: 636389-001		MS Sample Id:		636389-001 S			MSD Sample Id: 636389-001 SD					
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI) RPD Lin	nit Units	Analysis Date	Flag
Benzene	< 0.00101	0.101	0.0991	98	0.0919	92	70-130	8	35	mg/kg	09.10.19 12:03	
Toluene	< 0.00101	0.101	0.105	104	0.0979	98	70-130	7	35	mg/kg	09.10.19 12:03	
Ethylbenzene	< 0.00101	0.101	0.117	116	0.110	111	71-129	6	35	mg/kg	09.10.19 12:03	
m,p-Xylenes	< 0.00202	0.202	0.241	119	0.228	115	70-135	6	35	mg/kg	09.10.19 12:03	
o-Xylene	< 0.00101	0.101	0.119	118	0.113	114	71-133	5	35	mg/kg	09.10.19 12:03	
Surrogate			N %	/IS Rec	MS Flag	MSD %Rec	MSD Flag) [Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	12		104			70-130	%	09.10.19 12:03	
4-Bromofluorobenzene			1	28		126			70-130	%	09.10.19 12:03	

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. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

Final 1.000

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

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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 09/10/2019 08:05:00 AM Temperature Measuring device used : T-NM-007 Work Order #: 636391 Sample Receipt Checklist Comments

#1 *Temperature of cooler(s)?	4.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6*Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	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:
 Checklist completed by:

 Elizabeth McClellan

 Checklist reviewed by:
 Jessica Kramer

Date: 09/10/2019

Date: 09/10/2019

Analytical Report 637305

for LT Environmental, Inc.

Project Manager: Chris McKisson

RDX 17-35

034819046

23-SEP-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142), North Carolina (681)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Tampa: Florida (E87429), North Carolina (483)



23-SEP-19

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

Reference: XENCO Report No(s): 637305 RDX 17-35 Project Address:

Chris McKisson:

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) 637305. 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. 637305 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Vermer

 Jessica Kramer

 Project Assistant

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Sample Cross Reference 637305

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	09-13-19 09:30	2 ft	637305-001
PH01A	S	09-13-19 09:40	4 ft	637305-002
PH01B	S	09-13-19 09:50	6 ft	637305-003
PH02	S	09-13-19 10:00	2 ft	637305-004
PH02A	S	09-13-19 10:20	5 ft	637305-005
PH02B	S	09-13-19 10:40	7 ft	637305-006
PH03	S	09-13-19 11:00	2 ft	637305-007
PH03A	S	09-13-19 11:45	4 ft	637305-008

•



CASE NARRATIVE

Client Name: LT Environmental, Inc. Project Name: RDX 17-35

 Project ID:
 034819046

 Work Order Number(s):
 637305

 Report Date:
 23-SEP-19

 Date Received:
 09/18/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3101958 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3102031 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7686459-1-BSD,637191-021 S,637305-004.



Project Id:	034819046
Contact:	Chris McKisson

Project Location:

Certificate of Analysis Summary 637305

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-35

Date Received in Lab:Wed Sep-18-19 01:45 pmReport Date:23-SEP-19Project Manager:Jessica Kramer

	Lab Id:	637305-001		637305-0	02	637305-00)3	637305-004		637305-005		637305-006	
Analysis Requested	Field Id:	PH01		PH01A		PH01B		PH02		PH02A		PH02B	
Analysis Kequestea	Depth:	2- ft		4- ft		6- ft		2- ft		5- ft		7- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-13-19 (9:30	Sep-13-19 0	9:40	Sep-13-19 0	9:50	Sep-13-19 1	0:00	Sep-13-19	0:20	Sep-13-19 1	0:40
BTEX by EPA 8021B	Extracted:	Sep-18-19 1	6:09					Sep-18-19 1	6:09				
	Analyzed:	Sep-19-19 (04:37					Sep-19-19 0	4:57				
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		< 0.00101	0.00101					<0.000996	0.000996				
Toluene		< 0.00101	0.00101					<0.000996	0.000996				
Ethylbenzene		< 0.00101	0.00101					<0.000996	0.000996				
m,p-Xylenes		< 0.00202	0.00202					< 0.00199	0.00199				
o-Xylene		< 0.00101	0.00101					<0.000996	0.000996				
Total Xylenes		< 0.00101	0.00101					<0.000996	0.000996				
Total BTEX		< 0.00101	0.00101					<0.000996	0.000996				
Chloride by EPA 300	Extracted:	Sep-18-19 1	6:00	Sep-18-19 16:00		Sep-18-19 16:00		Sep-18-19 16:00		Sep-18-19 1	6:00	Sep-18-19 1	6:00
	Analyzed:	Sep-19-19 1	2:16	Sep-18-19 2	0:27	Sep-18-19 20:33		Sep-18-19 20:40		Sep-18-19 20:46		Sep-18-19 21:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		691 D	20.0	938	99.4	73.4 D	9.90	890	50.4	308	20.2	109 D	50.4
TPH by SW8015 Mod	Extracted:	Sep-18-19 1	6:45					Sep-18-19 1	6:45				
	Analyzed:	Sep-19-19 1	8:31					Sep-19-19 1	8:52				
	Units/RL:	mg/kg	RL					mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<25.0	25.0					<24.9	24.9				
Diesel Range Organics (DRO)		<25.0	25.0					<24.9	24.9				
Motor Oil Range Hydrocarbons (MRO)		<25.0	25.0					<24.9	24.9				
Total TPH		<25.0	25.0					<24.9	24.9				
Total GRO-DRO		<25.0	25.0					<24.9	24.9				

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.

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fession kramer

Jessica Kramer Project Assistant

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Project Id:	034819046
Contact:	Chris McKisson

Project Location:

Certificate of Analysis Summary 637305

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-35

Date Received in Lab:Wed Sep-18-19 01:45 pmReport Date:23-SEP-19Project Manager:Jessica Kramer

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	Lab Id:	637305-00)7	637305-0)8		
Analysis Requested	Field Id:	PH03		PH03A			
	Depth:	2- ft		4- ft			
	Matrix:	SOIL		SOIL			
	Sampled:	Sep-13-19 1	Sep-13-19 11:00		1:45		
Chloride by EPA 300	Extracted:	Sep-18-19 10	6:00	Sep-18-19 1	6:00		
	Analyzed:	Sep-18-19 2	Sep-18-19 21:12		1:19		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		6830 D	201	4670 D	202		

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.

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fession Vramer

Jessica Kramer Project Assistant

Final 1.000

.



Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id: PH01		Matrix:	Soil	Date Received:09.18.19 13.45				
Lab Sample Id: 637305-001		Date Collec	cted: 09.13.19 09.30		Sample Depth: 2 ft			
Analytical Method: Chloride by EF	PA 300				Prep Method: E30)0P		
Tech: MAB					% Moisture:			
Analyst: MAB		Date Prep:	09.18.19 16.00		Basis: We	t Weight		
Seq Number: 3101899		1						
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride	16887-00-6	691	20.0	mg/kg	09.19.19 13.44	D	20	
Analytical Method: TPH by SW80	15 Mod				Prep Method: SW	78015P		
Tech: DTH					% Moisture:			
Analyst: DTH		Date Prep:	09.18.19 16.45		Basis: We	t Weight		
Seq Number: 3102031								
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.19.19 18.31	U	1	
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.19.19 18.31	U	1	
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.19.19 18.31	U	1	
Total TPH	PHC635	<25.0	25.0	mo/ko	09 19 19 18 31	U	1	

Total TPH	PHC635	<25.0	25.0		mg/kg	09.19.19 18.31	U	1
Total GRO-DRO	PHC628	<25.0	25.0		mg/kg	09.19.19 18.31	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	127	%	70-135	09.19.19 18.31		
o-Terphenyl		84-15-1	106	%	70-135	09.19.19 18.31		

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Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id:	PH01		Matrix:	Soil		Date Received:	09.18.19 13.4	45	
Lab Sample Id: 637305-001			Date Col	lected: 09.13.19 09.30		Sample Depth: 2 ft			
Analytical M	ethod: BTEX by EPA	A 8021B				Prep Method: S	SW5030B		
Tech:	MAB					% Moisture:			
Analyst:	DTH		Date Prep	o: 09.18.19 16.09		Basis:	Wet Weight		
Seq Number:	3101958								
Parameter		Cas Number	Result	RL	Units	Analysis Dat	e Flag	Dil	
Benzene		71-43-2	< 0.00101	0.00101	mg/kg	09.19.19 04.3	7 U	1	
Toluene		108-88-3	<0.00101	0.00101	mø/kø	09 19 19 04 3	7 U	1	

o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	09.19.19 04.37	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	09.19.19 04.37	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	09.19.19 04.37	U	1
		~	%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	115	%	70-130	09.19.19 04.37		
1,4-Difluorobenzene		540-36-3	101	%	70-130	09.19.19 04.37		

Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id:	PH01A		Matrix:	Soil		Date Received	1:09.18.19	3.45
Lab Sample Id	1: 637305-002		Date Collec	cted: 09.13.19 09.40		Sample Depth		
Analytical Me	thod: Chloride by EPA	300				Prep Method:	E300P	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	09.18.19 16.00		Basis:	Wet Weig	ht
Seq Number:	3101899							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil
Chloride		16887-00-6	938	99.4	mg/kg	09.18.19 20.	27	10

Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

Sample Id:	PH01B		Matrix:	Soil		Date Received:	:09.18.19	3.45	
Lab Sample Id	: 637305-003		Date Collec	ted: 09.13.19 09.50		Sample Depth: 6 ft			
Analytical Me	thod: Chloride by EPA 3	800				Prep Method:	E300P		
Tech:	MAB					% Moisture:			
Analyst:	MAB		Date Prep:	09.18.19 16.00		Basis:	Wet Weig	ht	
Seq Number:	3101899								
Parameter		Cas Number	Result	RL	Units	Analysis Da	te Flag	; Dil	
Chloride		16887-00-6	73.4	9.90	mg/kg	09.19.19 17.3	30 D	1	



Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id: PH02			Matrix:	Soil		Ι	Date Received:09.18.19 13.45				
Lab Sample Id: 6	537305-004		Date Coll	ected: 09.13	.19 10.00	Sample Depth: 2 ft					
Analytical Metho	od: Chloride by EP	A 300				Prep Method: E300P					
Tech: M	IAB					9	% Moisture:				
Analyst: N	IAB		Date Prep	: 09.18	.19 16.00	H	Basis: Wet	Weight			
Seq Number: 3	101899										
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil		
Chloride		16887-00-6	890	50.4		mg/kg	09.18.19 20.40		5		
Analytical Method:TPH by SW8015 MTech:DTHAnalyst:DTHSeq Number:3102031		15 Mod	Date Prep	o: 09.18	.19 16.45	F 9 F	Prep Method: SW 6 Moisture: Basis: Wet	8015P t Weight			
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil		
Gasoline Range Hyd	drocarbons (GRO)	PHC610	<24.9	24.9		mg/kg	09.19.19 18.52	U	1		
Diesel Range Organ	ics (DRO)	C10C28DRO	<24.9	24.9		mg/kg	09.19.19 18.52	U	1		
Motor Oil Range Hydr	ocarbons (MRO)	PHCG2835	<24.9	24.9		mg/kg	09.19.19 18.52	U	1		
Total TPH		PHC635	<24.9	24.9		mg/kg	09.19.19 18.52	U	1		
Total GRO-DRO		PHC628	<24.9	24.9		mg/kg	09.19.19 18.52	U	1		
Surrogate			Cas Number	% Recovery	Units	Limits	Analysis Date	Flag			
1-Chlorooctan	e		111-85-3	147	%	70-135	09.19.19 18.52	**			
o-Terphenyl			84-15-1	123	%	70-135	09.19.19 18.52				





Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id:	PH02		Matrix:	Soil		Date Received	1:09.18.	19 13.45	
Lab Sample Id	l: 637305-004		Date Collecte	d:09.13.19 10.00	Sample Depth: 2 ft				
Analytical Me	thod: BTEX by EPA 802	1B				Prep Method:	SW503	30B	
Tech:	MAB					% Moisture:			
Analyst:	DTH		Date Prep:	09.18.19 16.09		Basis:	Wet W	eight	
Seq Number:	3101958								
Parameter		Cas Number	Result F	L	Units	Analysis D	ate l	Flag	Di

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.000996	0.000996		mg/kg	09.19.19 04.57	U	1
Toluene	108-88-3	< 0.000996	0.000996		mg/kg	09.19.19 04.57	U	1
Ethylbenzene	100-41-4	< 0.000996	0.000996		mg/kg	09.19.19 04.57	U	1
m,p-Xylenes	179601-23-1	< 0.00199	0.00199		mg/kg	09.19.19 04.57	U	1
o-Xylene	95-47-6	< 0.000996	0.000996		mg/kg	09.19.19 04.57	U	1
Total Xylenes	1330-20-7	< 0.000996	0.000996		mg/kg	09.19.19 04.57	U	1
Total BTEX		< 0.000996	0.000996		mg/kg	09.19.19 04.57	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	118	%	70-130	09.19.19 04.57		
4-Bromofluorobenzene		460-00-4	106	%	70-130	09.19.19 04.57		

Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

RDX 17-35

Sample Id:	PH02A		Matrix:	Soil		Date Received	:09.18.19 13.4	45
Lab Sample Io	1: 637305-005		Date Colle	cted: 09.13.19 10.20		Sample Depth: 5 ft		
Analytical Me	ethod: Chloride by EPA	300				Prep Method:	E300P	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	09.18.19 16.00		Basis:	Wet Weight	
Seq Number:	3101899							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil
Chloride		16887-00-6	308	20.2	mg/kg	09.18.19 20.	46	2

Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

Sample Id:	PH02B		Matrix:	Soil		Date Received:	09.18.19 13.4	5	
Lab Sample Id	1: 637305-006		Date Colle	cted: 09.13.19 10.40		Sample Depth: 7 ft			
Analytical Me	ethod: Chloride by EPA	300				Prep Method:	E300P		
Tech:	MAB					% Moisture:			
Analyst:	MAB		Date Prep:	09.18.19 16.00		Basis:	Wet Weight		
Seq Number:	3101899								
Parameter		Cas Number	Result	RL	Units	Analysis Dat	te Flag	Dil	
Chloride		16887-00-6	109	50.4	mg/kg	09.19.19 13.1	2 D	5	

Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

Sample Id:	РН03		Matrix:	Soil		Date Received:	:09.18.19 13.4	.5	
Lab Sample Id	1: 637305-007		Date Colle	cted: 09.13.19 11.00		Sample Depth: 2 ft			
Analytical Me	ethod: Chloride by EPA	300				Prep Method:	E300P		
Tech:	MAB					% Moisture:			
Analyst:	MAB		Date Prep:	09.18.19 16.00		Basis:	Wet Weight		
Seq Number:	3101899								
Parameter		Cas Number	Result	RL	Units	Analysis Da	te Flag	Dil	
Chloride		16887-00-6	6830	201	mg/kg	09.19.19 13.1	18 D	20	

Certificate of Analytical Results 637305

LT Environmental, Inc., Arvada, CO

Sample Id:	PH03A		Matrix:	Soil		Date Received	:09.18.19	13.45	
Lab Sample Id	: 637305-008		Date Collec	ted: 09.13.19 11.45		Sample Depth: 4 ft			
Analytical Me	thod: Chloride by EPA	300				Prep Method:	E300P		
Tech:	MAB					% Moisture:			
Analyst:	MAB		Date Prep:	09.18.19 16.00		Basis:	Wet Wei	ght	
Seq Number:	3101899								
Parameter		Cas Number	Result	RL	Units	Analysis Da	ite Fla	ıg Dil	
Chloride		16887-00-6	4670	202	mg/kg	09.19.19 13.	31 D	20	



- 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 Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Laborate	atory 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.

RDX 17-35

Analytical Method:	Chloride by EPA 30	00						P	rep Metho	od: E3	800P	
Seq Number:	3101899			Matrix:	Solid				Date Pre	ep: 09	.18.19	
MB Sample Id:	7686418-1-BLK		LCS San	nple Id:	7686418-	1-BKS		LCS	D Sample	Id: 76	86418-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag

Analytical Method:	Chloride by EPA 30)0						P	rep Metho	od: E30)0P	
Seq Number:	3101899			Matrix:	Soil				Date Pr	ep: 09.	18.19	
Parent Sample Id:	637191-020		MS San	nple Id:	637191-02	20 S		MS	D Sample	e Id: 637	191-020 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	4.71	200	204	100	216	106	90-110	6	20	mg/kg	09.18.19 19:10	

Analytical Method:	Chloride by	EPA 30	0						Pı	ep Metho	od: E30	00P	
Seq Number:	3101899]	Matrix:	Solid				Date Pre	ep: 09.	18.19	
Parent Sample Id:	637312-001			MS San	nple Id:	637312-00	01 S		MS	D Sample	Id: 637	7312-001 SD	
Parameter]	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Chloride		1220	1010	2390	116	2400	117	90-110	0	20	mg/kg	09.18.19 21:44	Х

Analytical Method:	TPH by S	W8015 M	od						F	Prep Method	l: SW	'8015P	
Seq Number:	3102031				Matrix:	Solid				Date Prep	o: 09.	18.19	
MB Sample Id:	7686459-1	-BLK		LCS Sar	nple Id:	7686459-	1-BKS		LCS	SD Sample	ld: 768	86459-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	<25.0	1000	951	95	986	99	70-135	4	35	mg/kg	09.19.19 15:45	
Diesel Range Organics ((DRO)	<25.0	1000	914	91	942	94	70-135	3	35	mg/kg	09.19.19 15:45	
Surrogate		MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSI %Re	D LCS c Fla	D I g	Limits	Units	Analysis Date	
1-Chlorooctane		135		1	.33		138	**	7	0-135	%	09.19.19 15:45	
o-Terphenyl		105		1	04		107		7	0-135	%	09.19.19 15:45	

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. RDX 17-35

Analytical Method:	TPH by SV	V8015 M	lod						P	rep Method	l: SW	8015P	
Seq Number:	3102031				Matrix:	Soil				Date Prep	o: 09.1	18.19	
Parent Sample Id:	637191-021	1		MS Sar	nple Id:	637191-02	21 S		MS	D Sample	ld: 637	191-021 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	<25.1	1000	917	92	948	94	70-135	3	35	mg/kg	09.19.19 16:47	
Diesel Range Organics (DRO)	<25.1	1000	874	87	907	90	70-135	4	35	mg/kg	09.19.19 16:47	
Surrogate				N %	AS Rec	MS Flag	MSD %Rec	MSI Flag) L g	limits	Units	Analysis Date	
1-Chlorooctane				1	37	**	130		7	0-135	%	09.19.19 16:47	
o-Terphenyl				1	02		110		7	0-135	%	09.19.19 16:47	

BTEX by EPA 8021	B						F	Prep Meth	od: SW:	5030B	
3101958			Matrix:	Solid				Date Pr	ep: 09.1	8.19	
7686555-1-BLK		LCS Sar	nple Id:	7686555-	1-BKS		LCS	SD Sample	e Id: 768	6555-1-BSD	
MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
< 0.00100	0.100	0.0813	81	0.0900	90	70-130	10	35	mg/kg	09.19.19 02:00	
< 0.00100	0.100	0.0977	98	0.0936	94	70-130	4	35	mg/kg	09.19.19 02:00	
< 0.00100	0.100	0.119	119	0.116	116	71-129	3	35	mg/kg	09.19.19 02:00	
< 0.00200	0.200	0.242	121	0.233	117	70-135	4	35	mg/kg	09.19.19 02:00	
< 0.00100	0.100	0.120	120	0.116	116	71-133	3	35	mg/kg	09.19.19 02:00	
MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSI %Re) LCS c Flag	D I g	limits	Units	Analysis Date	
102		1	07		102		7	0-130	%	09.19.19 02:00	
104		1	21		112		7	0-130	%	09.19.19 02:00	
	BTEX by EPA 8021 3101958 7686555-1-BLK MB Result <0.00100 <0.00100 <0.00100 <0.00200 <0.00100 <0.00100 MB %Rec 102 104	BTEX by EPA 8021B 3101958 7686555-1-BLK MB Spike Result Amount <0.00100	BTEX by EPA 8021B 3101958 7686555-1-BLK LCS Sar MB Spike LCS <0.00100	BTEX by EPA 8021B 3101958 Katrix: 7686555-1-BLK LCS S=relation MB Spike LCS LCS <0.00100	BTEX by EPA 8021B 3101958 Matrix: Solid 7686555-1-BLK LCS Sample Id: 7686555- MB Spike LCS LCS LCSD Result Result <0.00100	BTEX by EPA 8021B 3101958 Matrix: Solid 7686555-1-BLK LCS Sample Id: 7686555-1-BKS MB Spike LCS Kes LCSD Kesult LCSD <0.00100	BTEX by EPA 8021B 3101958 Matrix: Solid 7686555-1-BLK LCS Sample Id: 7686555-1-BKS MB Spike LCS LCS LCSD LCSD	BTEX by EPA 8021B F 3101958 Matrix: Solid 7686555-1-BLK LCS Sample Id: 7686555-1-BKS LCS MB Spike LCS LCS LCSD LCSD <thlcsd< th=""> LCSD LCSD</thlcsd<>	BTEX by EPA 8021B Prep Meth 3101958 Matrix: Solid Date Pr 7686555-1-BLK LCS Sample Id: 7686555-1-BKS LCSD Sample MB Spike LCS LCS LCSD LCSD LCSD Matrix: Solid Matrix: Solid LCSD Sample LCSD LCSD LCSD LCSD Sample Matrix: Solid Matrix: Solid Matrix: Solid LCSD Sample LCSD LCSD LCSD LCSD LCSD Matrix: Solid Matrix: Solid Matrix: Solid LCSD LCSD LCSD LCSD LCSD Matrix: Solid Matrix: Solid Matrix: Ma	BTEX by EPA 8021B Prep Method: SW3 3101958 Matrix: Solid Date Prep: 09.1 7686555-1-BLK LCS Sample Id: 7686555-1-BKS LCSD Sample Id: 7697-130 7697-130 769	BTEX by EPA 8021B Prep Method: SW5030B 3101958 Matrix: Solid Date Prep: $09.18.19$ 7686555-1-BLK LCS Sample Id Odd S55-1-BKS MB Spike LCS LCSD LCSD Natrix: Solid Date Prep: $09.18.19$ CRSD S55-1-BLK LCS Sample Id Odd S555-1-BSD MB Spike LCS LCS LCSD LCSD LCSD Matrix: Spike Analysis Date <0.00100

Analytical Method:	BTEX by EPA 802	1B							Prep Metho	d: SW	5030B	
Seq Number:	3101958]	Matrix:	Soil				Date Pre	p: 09.1	18.19	
Parent Sample Id:	637191-021		MS San	nple Id:	637191-02	21 S		М	SD Sample	Id: 637	191-021 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI) RPD Limi	t Units	Analysis Date	Flag
Benzene	< 0.00101	0.101	0.0795	79	0.0831	82	70-130	4	35	mg/kg	09.19.19 03:18	
Toluene	< 0.00101	0.101	0.0856	85	0.0825	82	70-130	4	35	mg/kg	09.19.19 03:18	
Ethylbenzene	< 0.00101	0.101	0.0929	92	0.102	101	71-129	9	35	mg/kg	09.19.19 03:18	
m,p-Xylenes	< 0.00201	0.201	0.189	94	0.206	102	70-135	9	35	mg/kg	09.19.19 03:18	
o-Xylene	< 0.00101	0.101	0.0954	94	0.103	102	71-133	8	35	mg/kg	09.19.19 03:18	
Surrogate			N %]	IS Rec	MS Flag	MSD %Ree	o MSI c Flag) g	Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	15		114			70-130	%	09.19.19 03:18	
4-Bromofluorobenzene			1	27		130			70-130	%	09.19.19 03:18	

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

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Total 200.7 / 6(Circle Method(s	10 200.8 / 602 3) and Metal(s) to I	0: be analyzed	8RCRA 1 TCLP/S	(3PPM Texas (3PLP 6010: 8F	11 AI RCRA	Sb As Sb As	Ba Be Ba Be	Cd Cr	Ca Cr C Co Cu P	b Mn Mo	b Mg Mn I Ni Se Ag 7	Ao Ni K	Se Ag SiO2	: Na Sr TI 1631 / 245.	Sn U V Zr 1 1 7470 174	: 71 : Hg
Notice: Signature of this c of service. Xenco will be I of Service Aminimum cha	ocument and relinquish iable only for the cost o roe of \$75.00 will be apr	ment of samples of samples of samples of samples and shabilited to each projection of the samples of the sample	constitutes a vali- ill not assume an ict and a charge c	d purchase order fr y responsibility for of \$5 for each samp	om client any losse le submitt	company t s or exper ed to Xeno	o Xenco, ses incur o, but no	ts affiliates red by the c t analyzed.	and subcon lient if such These terms	ractors. It ass losses are due will be enforce	igns standard te to circumstance d unless previou	rms and cond s beyond the sly negotiate	litions control d.			
Relinguished by:	(Signature)	Receiv	ved by: (Sign	ature)		Date/Ti	ne	Re	linquisher	d by: (Sign	ature)	Receiv	ed by: (Sign:	ature)	Date/	Time
		OLA	M		09/18	6102	13:42	2	1							
3								r (p								
5	-														Revised Date 051	418 Rev. 2018.1

XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 09/18/2019 01:45:00 PM Temperature Measuring device used : T-NM-007 Work Order #: 637305 Sample Receipt Checklist Comments

#1 *Temperature of cooler(s)?	0
#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

 Checklist reviewed by:
 Jessica Warmer

 Jessica Kramer

Date: 09/18/2019

Date: 09/20/2019

Analytical Report 644213

for

LT Environmental, Inc.

Project Manager: Chris McKisson

RDX Federal 17-35H

034819046

26-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)



26-NOV-19

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

Reference: XENCO Report No(s): 644213 RDX Federal 17-35H Project Address: Rural Eddy County

Chris McKisson:

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) 644213. 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. 644213 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,

fession Vermer

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 Id

FS01 FS02



Sample Cross Reference 644213

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	11-21-19 15:00	4 ft	644213-001
S	11-21-19 15:05	4 ft	644213-002



CASE NARRATIVE

Client Name: LT Environmental, Inc. Project Name: RDX Federal 17-35H

 Project ID:
 034819046

 Work Order Number(s):
 644213

 Report Date:
 26-NOV-19

 Date Received:
 11/22/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3108683 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Project Id:	034819046
Contact:	Chris McKisson
Project Location:	Rural Eddy County

Certificate of Analysis Summary 644213

LT Environmental, Inc., Arvada, CO Project Name: RDX Federal 17-35H

Date Received in Lab:Fri Nov-22-19 09:13 amReport Date:26-NOV-19Project Manager:Jessica Kramer

	Lab Id:	644213-0	001	644213-0	002		
Analysis Requested	Field Id:	FS01		FS02			
mulysis Requested	Depth:	4- ft		4- ft			
	Matrix:	SOIL	,	SOIL			
	Sampled:	Nov-21-19	15:00	Nov-21-19	15:05		
BTEX by EPA 8021B	Extracted:	Nov-25-19	11:45	Nov-25-19	11:45		
SUB: T104704400-19-19	Analyzed:	Nov-25-19	19:45	Nov-25-19	20:05		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00200	0.00200	< 0.00199	0.00199		
Toluene		< 0.00200	0.00200	< 0.00199	0.00199		
Ethylbenzene		< 0.00200	0.00200	< 0.00199	0.00199		
m,p-Xylenes		< 0.00401	0.00401	< 0.00398	0.00398		
o-Xylene		< 0.00200	0.00200	< 0.00199	0.00199		
Xylenes, Total		< 0.00200	0.00200	< 0.00199	0.00199		
Total BTEX		< 0.00200	0.00200	< 0.00199	0.00199		
Chloride by EPA 300	Extracted:	Nov-25-19	11:55	Nov-25-19	11:55		
SUB: T104704400-19-19	Analyzed:	Nov-25-19	13:31	Nov-25-19	13:52		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		1200	25.1	807	25.3		
TPH by SW8015 Mod	Extracted:	Nov-25-19	12:00	Nov-25-19	12:00		
SUB: T104704400-19-19	Analyzed:	Nov-25-19	22:10	Nov-25-19	22:32		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<49.9	49.9		
Diesel Range Organics (DRO)		<49.8	49.8	<49.9	49.9		
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	<49.9	49.9		
Total GRO-DRO		<49.8	49.8	<49.9	49.9		
Total TPH		<49.8	49.8	<49.9	49.9		

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

fession kramer

Jessica Kramer Project Assistant

Page 72 of 156

Final 1.000


Certificate of Analytical Results 644213

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	FS01		Matrix:	Soil]	Date Received:11.	22.19 09.13		
Lab Sample Id: 644213-001			Date Collec	cted: 11.21.19 15.00	Sample Depth: 4 ft				
Analytical Me	thod: Chloride by EPA	300]	Prep Method: E3	00P		
Tech:	CHE					% Moisture:			
Analyst:	CHE		Date Prep:	11.25.19 11.55]	Basis: We	et Weight		
Seq Number:	3108630				1	SUB: T104704400)-19-19		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride		16887-00-6	1200	25.1	mg/kg	11.25.19 13.31		5	

Analytical Method: TPH by SW801	5 Mod				F	Prep Method: SW	8015P	
Tech: DVM					9	6 Moisture:		
Analyst: ARM		Date Prep	b: 11.25	.19 12.00	E	Basis: We	t Weight	
Seq Number: 3108709					S	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	11.25.19 22.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	11.25.19 22.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	11.25.19 22.10	U	1
Total GRO-DRO	PHC628	<49.8	49.8		mg/kg	11.25.19 22.10	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	11.25.19 22.10	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	110	%	70-135	11.25.19 22.10		
o-Terphenyl		84-15-1	117	%	70-135	11.25.19 22.10		



Certificate of Analytical Results 644213

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	FS01		Matrix:	Soil		Date Received:11	.22.19 09.1	3	
Lab Sample Id	d: 644213-001		Date Coll	ected: 11.21.19 15.00	Sample Depth: 4 ft				
Analytical Me	ethod: BTEX by EPA	8021B				Prep Method: SV	V5030B		
Tech:	KTL					% Moisture:			
Analyst:	KTL		Date Prep	b: 11.25.19 11.45		Basis: We	et Weight		
Seq Number:	3108683		-			SUB: T10470440	0-19-19		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Benzene		71-43-2	< 0.00200	0.00200	mg/kg	11.25.19 19.45	U	1	
Toluene		108-88-3	< 0.00200	0.00200	mg/kg	11.25.19 19.45	U	1	
Ethylbenzene		100-41-4	< 0.00200	0.00200	mg/kg	11.25.19 19.45	U	1	
m,p-Xylenes		179601-23-1	< 0.00401	0.00401	mg/kg	11.25.19 19.45	U	1	
o-Xylene		95-47-6	< 0.00200	0.00200	mg/kg	11.25.19 19.45	U	1	
Xylenes, Total		1330-20-7	< 0.00200	0.00200	mg/kg	11.25.19 19.45	U	1	
Total BTEX			< 0.00200	0.00200	mg/kg	11.25.19 19.45	U	1	

u DILX	<0.00200	0.00200	mg/kg	11.23.17 17.45	U	
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	11.25.19 19.45	
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.25.19 19.45	



Certificate of Analytical Results 644213

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	FS02		Matrix:	Soil		Date Received:1	1.22.19 09.13			
Lab Sample Id: 644213-002			Date Collected: 11.21.19 15.05			Sample Depth: 4 ft				
Analytical Me	thod: Chloride by EPA	300				Prep Method: E	300P			
Tech:	CHE					% Moisture:				
Analyst:	CHE		Date Prep:	11.25.19 11.55		Basis: W	Vet Weight			
Seq Number:	3108630					SUB: T1047044	00-19-19			
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil		
Chloride		16887-00-6	807	25.3	mg/kg	11.25.19 13.52		5		

Analytical Method: TPH by SW801	5 Mod				Р	Prep Method: SW8015P					
Tech: DVM					%	6 Moisture:					
Analyst: ARM		Date Prep	: 11.25	.19 12.00	E	asis: We	t Weight				
Seq Number: 3108709					S	UB: T104704400	-19-19				
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil			
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	11.25.19 22.32	U	1			
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	11.25.19 22.32	U	1			
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	11.25.19 22.32	U	1			
Total GRO-DRO	PHC628	<49.9	49.9		mg/kg	11.25.19 22.32	U	1			
Total TPH	PHC635	<49.9	49.9		mg/kg	11.25.19 22.32	U	1			
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag				
1-Chlorooctane		111-85-3	109	%	70-135	11.25.19 22.32					
o-Terphenyl		84-15-1	115	%	70-135	11.25.19 22.32					



Certificate of Analytical Results 644213

LT Environmental, Inc., Arvada, CO

Sample Id: FS02			Matrix:	Soil		Date Received:11.22.19 09.13					
Lab Sample Id	l: 644213-002		Date Coll	lected: 11.21.19	0 15.05	Sample Depth: 4 ft					
Analytical Me	thod: BTEX by EPA	8021B				Prep Method: SW	V5030B				
Tech:	KTL					% Moisture:					
Analyst:	KTL		Date Prep	b: 11.25.19	0 11.45	Basis: We	et Weight				
Seq Number:	3108683				SUB: T104704400-1						
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil			
Benzene		71-43-2	< 0.00199	0.00199	mg/kg	11.25.19 20.05	U	1			
Toluene		108-88-3	< 0.00199	0.00199	mg/kg	11.25.19 20.05	U	1			
Ethylbenzene		100-41-4	< 0.00199	0.00199	mg/kg	11.25.19 20.05	U	1			
m,p-Xylenes		179601-23-1	< 0.00398	0.00398	mg/kg	11.25.19 20.05	U	1			
o-Xylene		95-47-6	< 0.00199	0.00199	mg/kg	11.25.19 20.05	U	1			
Xylenes, Total		1330-20-7	< 0.00199	0.00199	mg/kg	11.25.19 20.05	U	1			
Total BTEX			< 0.00199	0.00199	mg/kg	11.25.19 20.05	U	1			
Surrogate			Cas Number	%	Units Limit	s Analysis Date	Flag				

Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.25.19 20.05	
4-Bromofluorobenzene	460-00-4	102	%	70-130	11.25.19 20.05	

- 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 Clie	nt Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Laboration	atory 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.

RDX Federal 17-35H

Analytical Method:	Chloride by EPA 30	0						Pr	ep Metho	od: E30	OP	
Seq Number:	3108630]	Matrix:	Solid				Date Pre	ep: 11.2	5.19	
MB Sample Id:	7691116-1-BLK		LCS San	nple Id:	7691116-1	I-BKS		LCSI	O Sample	e Id: 769	116-1-BSD	
Parameter	MB Bosult	Spike	LCS Bocult	LCS	LCSD Becult		Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
	Kesuit	Amount	Result	/once	Result	70 Kec					Date	

Analytical Method:	Chloride by EPA 30	0						Pı	ep Metho	od: E30	0P	
Seq Number:	3108630			Matrix:	Soil				Date Pre	ep: 11.2	25.19	
Parent Sample Id:	644209-008		MS San	nple Id:	644209-00	08 S		MS	D Sample	Id: 644	209-008 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	97.4	200	305	104	296	99	90-110	3	20	mg/kg	11.25.19 12:27	

Analytical Method:	Chloride by EPA 30	0						Pı	ep Metho	od: E30	0P	
Seq Number:	3108630			Matrix:	Soil				Date Pr	ep: 11.2	25.19	
Parent Sample Id:	644209-017		MS Sar	nple Id:	644209-01	17 S		MS	D Sample	e Id: 644	209-017 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	203	200	401	99	402	100	90-110	0	20	mg/kg	11.25.19 13:42	

Analytical Method:	TPH by S	W8015 M	od						F	rep Method	l: SW	'8015P	
Seq Number:	3108709				Matrix:	Solid				Date Prep): 11.	25.19	
MB Sample Id:	7691145-1	-BLK		LCS Sar	nple Id:	7691145-	1-BKS		LCS	SD Sample l	ld: 769	01145-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	<15.0	1000	987	99	965	97	70-135	2	20	mg/kg	11.25.19 12:42	
Diesel Range Organics (DRO)	<15.0	1000	1010	101	994	99	70-135	2	20	mg/kg	11.25.19 12:42	
Surrogate		MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSI %Re) LCS c Flag	D I g	Limits	Units	Analysis Date	
1-Chlorooctane		100		1	01		100		7	0-135	%	11.25.19 12:42	
o-Terphenyl		110		1	00		88		7	0-135	%	11.25.19 12:42	

Analytical Method: Seq Number:	TPH by SW8015 Mod 3108709	Matrix: MB Sample Id:	Solid 7691145-1-BLK	Prep Method: Date Prep:	SW8 11.25	015P 5.19	
Parameter		MB Result		τ	Inits	Analysis Date	Flag
Motor Oil Range Hydrocarb	ons (MRO)	<50.0		m	ıg/kg	11.25.19 12:21	

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

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Final 1.000



LT Environmental, Inc.

RDX Federal 17-35H

Analytical Method:	TPH by SW	78015 M	od						F	rep Method	l: SW	8015P	
Seq Number:	3108709			1	Matrix:	Soil				Date Prep	o: 11.2	25.19	
Parent Sample Id: 644215-001				MS San	644215-001 S			MSD Sample Id: 644215-001					
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	<15.0	999	1040	104	1070	107	70-135	3	20	mg/kg	11.25.19 15:06	
Diesel Range Organics (DRO)	40.0	999	1070	103	1120	108	70-135	5	20	mg/kg	11.25.19 15:06	
Surrogate				M %1	IS Rec	MS Flag	MSD %Rec	MSD c Flag	I	limits	Units	Analysis Date	
1-Chlorooctane				1	11		115		7	0-135	%	11.25.19 15:06	
o-Terphenyl				1	10		116		7	0-135	%	11.25.19 15:06	

Analytical Method:	BTEX by EPA 8021	В]	Prep Meth	od: SW	5030B	
Seq Number:	3108683			Matrix:	Solid				Date Pr	ep: 11.2	25.19	
MB Sample Id:	7691109-1-BLK		LCS Sar	nple Id:	7691109-	1-BKS		LC	SD Sample	e Id: 769	1109-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI) RPD Lim	it Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.112	112	0.109	109	70-130	3	35	mg/kg	11.25.19 13:06	
Toluene	< 0.00200	0.100	0.104	104	0.104	104	70-130	0	35	mg/kg	11.25.19 13:06	
Ethylbenzene	< 0.00200	0.100	0.106	106	0.108	108	70-130	2	35	mg/kg	11.25.19 13:06	
m,p-Xylenes	< 0.00400	0.200	0.216	108	0.221	111	70-130	2	35	mg/kg	11.25.19 13:06	
o-Xylene	< 0.00200	0.100	0.106	106	0.109	109	70-130	3	35	mg/kg	11.25.19 13:06	
Surrogate	MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSI %Ree) LCS c Flag	D i g	Limits	Units	Analysis Date	
1,4-Difluorobenzene	107		1	12		111		,	70-130	%	11.25.19 13:06	
4-Bromofluorobenzene	93		1	01		104		,	70-130	%	11.25.19 13:06	

Analytical Method:	BTEX by EPA 802	1B						Prep Method: SW5030B					
Seq Number:	3108683			Matrix:	Soil				Date P	rep: 11.2	5.19		
Parent Sample Id:	644216-001		MS Sar	nple Id:	644216-0	01 S		M	SD Sampl	e Id: 6442	216-001 SD		
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPE	RPD Lin	nit Units	Analysis Date	Flag	
Benzene	< 0.00198	0.0992	0.126	127	0.133	133	70-130	5	35	mg/kg	11.25.19 13:46	Х	
Toluene	< 0.00198	0.0992	0.106	107	0.110	110	70-130	4	35	mg/kg	11.25.19 13:46		
Ethylbenzene	< 0.00198	0.0992	0.117	118	0.120	120	70-130	3	35	mg/kg	11.25.19 13:46		
m,p-Xylenes	< 0.00397	0.198	0.0814	41	0.0840	42	70-130	3	35	mg/kg	11.25.19 13:46	Х	
o-Xylene	< 0.00198	0.0992	0.136	137	0.150	150	70-130	10	35	mg/kg	11.25.19 13:46	Х	
Surrogate			N %	AS Rec	MS Flag	MSD %Ree	o MSE c Flag)] ;	Limits	Units	Analysis Date		
1,4-Difluorobenzene			1	16		113		2	70-130	%	11.25.19 13:46		
4-Bromofluorobenzene			1	15		114		-	70-130	%	11.25.19 13:46		

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

Final 1.000

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

0 G	" Unne Byers #	Relinquished by: (Signature)	of service. Xenco will be liable only for the cost of sar of service. Xenco will be liable only for the cost of sar of Xenco. A minimum charge of \$75.00 will be applied	Circle Method(s) and Metal(s) to be	Total 200 7 (6040 200 6 (6000					FSOL	FSOI	ID Sample Identification N	Sample Custody Seals: Yes No	Cooler Custody Seals: Yes No	Received Intact: Ves No	Temperature (°C):	SAMPLE RECEIPT Temp I	PO # 2RP-5649	Sampler's Name: Anna byer	Project Location Ruzl Edd	Project Number: 034819044	Project Name: RDX Federa	Phone: 970- 285	City, State ZIP: Rifle, Co	Address: 820 Megan	Company Name: LT Envivon	Project Manager: Chris McK		
Eller M	J A B	Received by: (Signature)	of samples constitutes a valid purchase orc ples and shall not assume any responsibilit to each project and a charge of \$5 for each s	analyzed TCLP / SPLP 6						5 11/21/19/1505	S 11/2/19 1520	latrix Date Lime Sampled Sampled	N/A Total Containers:	N/A Correction Factor:	T-NM-p	Thermometer ID	Blank: Ves No Wet Ice:	Quote #:	J Due Date	4 County Rush: E	Routine	17-35H Turn	-9985 Email: c	91620	Ave, Unit B	mental	15500	Midland,TX (432) 704- Phoenix,AZ (480) 355-09	
1/22/19.9.0	11/21/10/1900	Date/Time	ler from client company to Xenco, its affiliat y for any losses or expenses incurred by th ample submitted to Xenco, but not analyze	010: 8RCRA Sb As Ba Be C						H, I XX X	4、 1 X X V	Num TPI- BTJ	ber o t (E X	FCC FCC	onta A EPP	iners 80	No 302)	e.	5 DAY	Code	Around	nekisson@itenv.com	City, State ZIP:	Address:	Company Name: LT Gnu	Bill to: (if different) Chris N	5440 EL Paso,TX (915) 585-3443 Lubb 00 Atlanta,GA (770) 449-8800 Tampa,FI	
Paral + 5	2	Relinquished by: (Signature	tes and subcontractors. It assigns standard term e client if such losses are due to circumstances I d. These terms will be enforced unless previously	Be B Cd Ca Cr Co Cu Fe Pb M 2d Cr Co Cu Pb Mn Mo Ni Se A							~	Cho	brid	le	(4	EPP	+ 2	300	0.0)		ANALYSIS REQ	it alayers @ henv.com			ivon mental	telli sson	ock,TX (806) 794-1296 Craslbad, NM (432) 70 L (813) 620-2000 West Palm Beach, FL (561)	
(my) Received by: (Signature)	ns and conditions beyond the control r negotiated.	g TI U 1631 / 1631 /		/								TAT	Zn /	Nac	HCL	H2S	HNG	Non	Med	UEST	Deliverables: EDD ADaPT	Reporting:Level II Level III PST/US	State of Project:	Program: UST/PST PRP Brownfiel	Work Order Com	04-5440 689-6701 <u>www.xenco.com</u>	
	11/22/19 9:12	Date/Time		1 Sn U V Zn 245.1/7470 /7471 : Hg								Sample Comments	received by 4:00pm	starts the day recevied by the lah	Acetate+ NaOH: Zn	DH: Na	L: HL	S04: H2	03: HN	NO	OH: Me	Preservative Codes	Other:			Ids RRC Superfund	nments	Page 1 of 1	

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Inter-Office Shipment

.

IOS Number : 52994

Date/Time:	: 11.22	2.2019	Created by:	Elizabeth Mc	clellan	Please send report to:	Jessica Krame	er		
Lab# From	: Carl	sbad	Delivery Pri	ority:		Address:	1089 N Canal	Street		
Lab# To:	Mid	land	Air Bill No.	:		E-Mail:	jessica.krame	@xen	co.com	
Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	РМ	Analytes	Sign
644213-001	S	FS01	11.21.2019 15:00	SW8015MOD_NM	TPH by SW8015 Mod	11.29.2019	12.05.2019	JKR	GRO-DRO PHCC10C28	
644213-001	S	FS01	11.21.2019 15:00	SW8021B	BTEX by EPA 8021B	11.29.2019	12.05.2019	JKR	BZ BZME EBZ XYLENE	
644213-001	S	FS01	11.21.2019 15:00	E300_CL	Chloride by EPA 300	11.29.2019	05.19.2020	JKR	CL	
644213-002	S	FS02	11.21.2019 15:05	SW8021B	BTEX by EPA 8021B	11.29.2019	12.05.2019	JKR	BZ BZME EBZ XYLENE	
644213-002	S	FS02	11.21.2019 15:05	E300_CL	Chloride by EPA 300	11.29.2019	05.19.2020	JKR	CL	
644213-002	S	FS02	11.21.2019 15:05	SW8015MOD_NM	TPH by SW8015 Mod	11.29.2019	12.05.2019	JKR	GRO-DRO PHCC10C28	

Inter Office Shipment or Sample Comments:

Relinquished By:

.

Elizabeth McClellan

Date Relinquished: 11.22.2019

ession framer Received By: Jessica Kramer Date Received: 11.25.2019 Cooler Temperature: 1.2

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland IOS #: 52994

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

Sent By:	Elizabeth McClellan	Date Sent:	11.22.2019 12.19 PM
Received By:	Jessica Kramer	Date Received:	11.25.2019 08.00 AM

Sample Receipt Che	cklist	Comments
#1 *Temperature of cooler(s)?	1.2	
#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:	fession kenner								

Jession MAMMER Jessica Kramer

Date: 11.25.2019



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 11/22/2019 09:13:00 AM Temperature Measuring device used : T-NM-007 Work Order #: 644213 Sample Receipt Checklist Comments

#1 *Temperature of cooler(s)?	1.5	
#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:
 Checklist completed by:

 Elizabeth McClellan

 Checklist reviewed by:
 Jessica Kramer

Date: 11/22/2019

Date: 11/23/2019

Analytical Report 644603

for

LT Environmental, Inc.

Project Manager: Chris McKisson

RDX Federal 17-35H

034819046

02-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)



02-DEC-19

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

Reference: XENCO Report No(s): 644603 RDX Federal 17-35H Project Address: Rural Eddy County

Chris McKisson:

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) 644603. 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. 644603 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Vermer

 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



LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH04	S	11-26-19 12:15	0.5 ft	644603-001
PH04A	S	11-26-19 12:25	4 ft	644603-002
PH05	S	11-26-19 12:35	0.5 ft	644603-003
PH05A	S	11-26-19 13:00	4 ft	644603-004
PH06	S	11-26-19 14:25	0.5 ft	644603-005
PH06A	S	11-26-19 14:35	4 ft	644603-006
PH07	S	11-26-19 14:45	0.5 ft	644603-007
PH07A	S	11-26-19 15:10	4 ft	644603-008
PH08	S	11-26-19 15:20	0.5 ft	644603-009
PH08A	S	11-26-19 15:30	4 ft	644603-010
PH09	S	11-26-19 15:40	0.5 ft	644603-011
PH09A	S	11-26-19 15:50	4 ft	644603-012



CASE NARRATIVE

Client Name: LT Environmental, Inc. Project Name: RDX Federal 17-35H

 Project ID:
 034819046

 Work Order Number(s):
 644603

 Report Date:
 02-DEC-19

 Date Received:
 11/27/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109010 Chloride by EPA 300

Lab Sample ID 644603-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 644603-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.

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

Batch: LBA-3109024 TPH by SW8015 Mod

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

Samples affected are: 644603-005,644603-012,644603-009.

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

Samples affected are: 644603-012,644603-009.

Batch: LBA-3109032 BTEX by EPA 8021B

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



Project Id:	034819046
Contact:	Chris McKisson
Project Location:	Rural Eddy County

Certificate of Analysis Summary 644603

LT Environmental, Inc., Arvada, CO Project Name: RDX Federal 17-35H

Date Received in Lab:Wed Nov-27-19 09:10 amReport Date:02-DEC-19Project Manager:Jessica Kramer

	Lab Id:	644603-001		644603-0	002	644603-0	003	644603-004		644603-005		644603-006	
Analysis Requested	Field Id:	PH04	Ļ	PH044	4	PH05	i	PH05.	A	PH06	5	PH06A	
Analysis Kequesieu	Depth:	0.5- ft	0.5- ft			0.5- ft	t	4- ft		0.5- f	t	4- ft	
	Matrix:	SOIL	,	SOIL		SOIL	,	SOIL	,	SOIL		SOIL	
	Sampled:	Nov-26-19	12:15	Nov-26-19	12:25	Nov-26-19	12:35	Nov-26-19	13:00	Nov-26-19	14:25	Nov-26-19	14:35
BTEX by EPA 8021B	Extracted:	Nov-27-19	Nov-27-19 10:11 N		10:11	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19 10:11	
	Analyzed:	Nov-27-19	12:51	Nov-27-19	13:10	Nov-27-19	13:30	Nov-27-19	13:49	Nov-27-19	14:08	Nov-27-19	14:27
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202
Toluene		< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202
Ethylbenzene		< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202
m,p-Xylenes		< 0.00403	0.00403	< 0.00399	0.00399	< 0.00397	0.00397	< 0.00399	0.00399	< 0.00398	0.00398	< 0.00403	0.00403
o-Xylene		< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202
Xylenes, Total	lenes, Total <0.00202 0.00202		0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202
Total BTEX	Total BTEX <0.00202 0.		0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202
Chloride by EPA 300	Extracted:	Nov-27-19	11:11	Nov-27-19 11:11		Nov-27-19	11:11	Nov-27-19	11:11	Nov-27-19 11:11		Nov-27-19 11:11	
	Analyzed:	Nov-27-19	12:11	Nov-27-19	12:28	Nov-27-19 12:33		Nov-27-19 12:39		Nov-27-19 12:44		Nov-27-19 13:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		186	99.8	13.6 D	10.0	36.3	10.1	11.5	10.1	<10.0	10.0	73.6 D	9.94
TPH by SW8015 Mod	Extracted:	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00
	Analyzed:	Nov-27-19	11:03	Nov-27-19	11:24	Nov-28-19	07:53	Nov-27-19	11:44	Nov-27-19	12:05	Nov-28-19	08:13
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.3	50.3	<50.2	50.2	<50.1	50.1	<50.1	50.1	<50.2	50.2	<50.1	50.1
Diesel Range Organics (DRO)		<50.3	50.3	<50.2	50.2	<50.1	50.1	<50.1	50.1	<50.2	50.2	<50.1	50.1
Motor Oil Range Hydrocarbons (MRO)		<50.3	50.3	<50.2	50.2	<50.1	50.1	<50.1	50.1	<50.2	50.2	<50.1	50.1
Total GRO-DRO		<50.3	50.3	<50.2	50.2	<50.1	50.1	<50.1	50.1	<50.2	50.2	<50.1	50.1
Total TPH		<50.3	50.3	<50.2	50.2	<50.1	50.1	<50.1	50.1	<50.2	50.2	<50.1	50.1

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

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

Version: 1.%

fession kenner

Jessica Kramer Project Assistant

Page 88 of 156

Final 1.000



Project Id:	034819046
Contact:	Chris McKisson
Project Location:	Rural Eddy County

Certificate of Analysis Summary 644603

LT Environmental, Inc., Arvada, CO Project Name: RDX Federal 17-35H

Date Received in Lab:Wed Nov-27-19 09:10 amReport Date:02-DEC-19Project Manager:Jessica Kramer

	Lab Id:	644603-0	007	644603-0	008	644603-0	009	644603-	010	644603-	011	644603-	012
Analysis Requested	Field Id:	PH07		PH074	A	PH08	3	PH08.	A	PH09)	PH094	4
Analysis Requested	Depth:	0.5- ft		4- ft		0.5- ft	t	4- ft		0.5- f	t	4- ft	
	Matrix:	SOIL		SOIL		SOIL	,	SOIL	,	SOIL		SOIL	
	Sampled:	Nov-26-19	14:45	Nov-26-19	15:10	Nov-26-19	15:20	Nov-26-19	15:30	Nov-26-19	15:40	Nov-26-19	15:50
BTEX by EPA 8021B	Extracted:	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	10:11
	Analyzed:	Nov-27-19	14:46	Nov-27-19	15:05	Nov-27-19	15:24	Nov-27-19	15:43	Nov-27-19	17:43	Nov-27-19	18:02
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00197	0.00197	< 0.00196	0.00196
Toluene		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00197	0.00197	< 0.00196	0.00196
Ethylbenzene		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00197	0.00197	< 0.00196	0.00196
m,p-Xylenes		< 0.00404	0.00404	< 0.00404	0.00404	< 0.00401	0.00401	< 0.00398	0.00398	< 0.00394	0.00394	< 0.00393	0.00393
o-Xylene		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00197	0.00197	< 0.00196	0.00196
Xylenes, Total		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00197	0.00197	< 0.00196	0.00196
Total BTEX		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00197	0.00197	< 0.00196	0.00196
Chloride by EPA 300	Extracted:	Nov-27-19	11:11	Nov-27-19 11:11		Nov-27-19	11:11	Nov-27-19	11:11	Nov-27-19	11:11	Nov-27-19	11:11
	Analyzed:	Nov-27-19	13:07	Nov-27-19	13:12	Nov-27-19	13:18	Nov-27-19 13:23		Nov-27-19 13:29		Nov-27-19 13:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<9.82	9.82	17.3	9.94	14.0	9.98	54.3	10.0	50.6	50.3	73.1 D	9.92
TPH by SW8015 Mod	Extracted:	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00
	Analyzed:	Nov-27-19	12:25	Nov-27-19	12:25	Nov-27-19	12:45	Nov-27-19	12:45	Nov-27-19	13:05	Nov-27-19	13:25
	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	<49.9	49.9	<50.2	50.2	<50.3	50.3	<49.8	49.8	<49.8	49.8
Diesel Range Organics (DRO)		<50.2	50.2	<49.9	49.9	<50.2	50.2	<50.3	50.3	<49.8	49.8	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	<49.9	49.9	<50.2	50.2	<50.3	50.3	<49.8	49.8	<49.8	49.8
Total GRO-DRO		<50.2	50.2	<49.9	49.9	<50.2	50.2	<50.3	50.3	<49.8	49.8	<49.8	49.8
Total TPH		<50.2	50.2	<49.9	49.9	<50.2	50.2	<50.3	50.3	<49.8	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.

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Version: 1.%

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Jessica Kramer Project Assistant

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Final 1.000

1-Chlorooctane

o-Terphenyl



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Total TPH		PHC635	<50.3	50.3	mg/kg	11.27.19 11.03	U	1
Total GRO-DRO)	PHC628	<50.3	50.3	mg/kg	11.27.19 11.03	U	1
Motor Oil Range H	Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.27.19 11.03	U	1
Diesel Range Or	rganics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.27.19 11.03	U	1
Gasoline Range	Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.27.19 11.03	U	1
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3109024							
Analyst:	DTH		Date Prep:	11.27.19 11.00	E	Basis: Wet	Weight	
Tech:	DIH				%	Moisture:		
Analytical Me	ethod: TPH by SW801	5 Mod			P	rep Method: SW8	3015P	
Chloride		16887-00-6	186	99.8	mg/kg	11.27.19 12.11		10
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3109010							
Analyst:	MAB		Date Prep:	11.27.19 11.11	E	Basis: Wet	Weight	
Tech:	MAB				%	6 Moisture:		
Analytical Me	ethod: Chloride by EP	A 300			Р	rep Method: E30	0P	
	a: 644603-001		Date Collec	ted: 11.26.19 12.15	Sample Depth: 0.5 ft			
Lab Sample Id	4. 644602.001		D 0 11		0	1 0 1 0 7 1	с.	

133

133

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70-135

70-135

11.27.19 11.03

11.27.19 11.03

111-85-3

84-15-1

Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

Sample Id:	PH04		Matrix:	Soil	Date Received	1:11.27.19 09.10	
Lab Sample Id: 644603-001			Date Collected	: 11.26.19 12.15	Sample Depth: 0.5 ft		
Analytical Me	thod: BTEX by EPA 8021	В			Prep Method:	SW5030B	
Tech:	MAB				% Moisture:	*** . ***	
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight	
Seq Number:	3109032						
Davamatar		Coc Number	Docult DI	T	4	-4- Fl F	

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	11.27.19 12.51	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	11.27.19 12.51	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	11.27.19 12.51	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	11.27.19 12.51	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	11.27.19 12.51	U	1
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	11.27.19 12.51	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	11.27.19 12.51	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	107	%	70-130	11.27.19 12.51		
1,4-Difluorobenzene		540-36-3	101	%	70-130	11.27.19 12.51		



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id: Lab Sample Id	PH04A 1: 644603-002		Matrix: Date Collect	Soil ted: 11.26.19 12.25		Date Received Sample Depth	:11.27.19 09.10 :4 ft)
Analytical Me Tech: Analyst: Seq Number:	ethod: Chloride by EPA MAB MAB 3109010	300	Date Prep:	11.27.19 11.11		Prep Method: % Moisture: Basis:	E300P Wet Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil
Chloride		16887-00-6	13.6	10.0	mg/kg	11.30.19 23.	31 D	1
Analytical Me	ethod: TPH by SW8015	Mod				Prep Method:	SW8015P	
Tech:						% ivioisture:		

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	11.27.19 11.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2		mg/kg	11.27.19 11.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2		mg/kg	11.27.19 11.24	U	1
Total GRO-DRO	PHC628	<50.2	50.2		mg/kg	11.27.19 11.24	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	11.27.19 11.24	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	11-85-3	120	%	70-135	11.27.19 11.24		
o-Terphenyl	8	4-15-1	128	%	70-135	11.27.19 11.24		

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LT Environmental, Inc., Arvada, CO

Sample Id:	PH04A		Matrix:	Soil	Date Received	1:11.27.19 09.10	
Lab Sample Id	: 644603-002		Date Collected	: 11.26.19 12.25	Sample Depth: 4 ft		
Analytical Me	thod: BTEX by EPA 8021	В			Prep Method:	SW5030B	
Tech:	MAB				% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight	
Seq Number:	3109032						
Danamatan		Cog Number	Docult DI	TI!4-	A	-4- Fl T	

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	11.27.19 13.10	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	11.27.19 13.10	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	11.27.19 13.10	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	11.27.19 13.10	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	11.27.19 13.10	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	11.27.19 13.10	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	11.27.19 13.10	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	111	%	70-130	11.27.19 13.10		
1,4-Difluorobenzene		540-36-3	98	%	70-130	11.27.19 13.10		

1-Chlorooctane

o-Terphenyl



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LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH05		Matrix:	Soil		I	Date Received:11.2	7.19 09.1	0
Lab Sample Io	l: 644603-003		Date Colle	cted: 11.26.	19 12.35	5	Sample Depth: 0.5 t	ft	
Analytical Me	ethod: Chloride by EP	PA 300				I	Prep Method: E30	0P	
Tech:	MAB					ç	% Moisture:		
Analyst:	MAB		Date Prep:	11.27.	19 11.11	Ι	Basis: Wet	Weight	
Seq Number:	3109010							U	
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	36.3	10.1		mg/kg	11.27.19 12.33		1
Analytical Me Tech: Analyst: Seq Number:	ethod: TPH by SW80 DTH DTH 3109024	15 Mod	Date Prep:	11.27.	19 11.00	H 9 H	Prep Method: SW8 % Moisture: Basis: Wet	8015P Weight	
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range	Hydrocarbons (GRO)	PHC610	<50.1	50.1		mg/kg	11.28.19 07.53	U	1
Diesel Range Or	ganics (DRO)	C10C28DRO	<50.1	50.1		mg/kg	11.28.19 07.53	U	1
Motor Oil Range H	lydrocarbons (MRO)	PHCG2835	<50.1	50.1		mg/kg	11.28.19 07.53	U	1
Total GRO-DRC)	PHC628	< 50.1	50.1		mg/kg	11.28.19 07.53	U	1
Total TPH		PHC635	< 50.1	50.1		mg/kg	11.28.19 07.53	U	1
Surrogate			% Cas Number	Recovery	Units	Limits	Analysis Date	Flag	

112

121

%

%

70-135

70-135

11.28.19 07.53

11.28.19 07.53

111-85-3

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Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH05		Matrix:	Soil	Date Received	d:11.27.19 09.10)
Lab Sample Id:	644603-003		Date Collected	1: 11.26.19 12.35	Sample Depth	n: 0.5 ft	
Analytical Meth	nod: BTEX by EPA 8021	В			Prep Method:	SW5030B	
Tech:	MAB				% Moisture:		
Analyst: 1	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight	
Seq Number:	3109032						
Parameter		Cas Number	Result R	L Uni	ts Analysis E	Date Flag	Dil

1 di dificter	Cas rumber	ittesuit	KL		Units	Analysis Date	Flag	Dii
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	11.27.19 13.30	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	11.27.19 13.30	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	11.27.19 13.30	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	11.27.19 13.30	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	11.27.19 13.30	U	1
Xylenes, Total	1330-20-7	< 0.00198	0.00198		mg/kg	11.27.19 13.30	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	11.27.19 13.30	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	115	%	70-130	11.27.19 13.30		
1,4-Difluorobenzene		540-36-3	100	%	70-130	11.27.19 13.30		

o-Terphenyl



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LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id: PH05A		Matrix:	Soil		Ε	Date Received:11.2	7.19 09.1	0
Lab Sample Id: 644603-004		Date Collec	cted: 11.26.19	3.00	S	ample Depth: 4 ft		
Analytical Method: Chloride by	v EPA 300				Р	rep Method: E30	0P	
Tech: MAB					%	6 Moisture:		
Analyst: MAB		Date Prep:	11.27.19	1.11	В	asis: Wet	Weight	
Seq Number: 3109010		1						
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.5	10.1		mg/kg	11.27.19 12.39		1
Analytical Method:TPH by SWTech:DTHAnalyst:DTHSeq Number:3109024	/8015 Mod	Date Prep:	11.27.19	1.00	P % B	rep Method: SW3 6 Moisture: 8asis: Wet	8015P Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1		mg/kg	11.27.19 11.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1		mg/kg	11.27.19 11.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1		mg/kg	11.27.19 11.44	U	1
Total GRO-DRO	PHC628	<50.1	50.1		mg/kg	11.27.19 11.44	U	1
Total TPH	PHC635	<50.1	50.1		mg/kg	11.27.19 11.44	U	1
Surrogate		% Cas Number	Recovery U	nits	Limits	Analysis Date	Flag	
1-Chlorooctane	11	1-85-3	85	%	70-135	11.27.19 11.44		

91

%

70-135

11.27.19 11.44

84-15-1

Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

Sample Id:	PH05A		Matrix:	Soil	Date Re	eceived:11.27.19 09.10	0
Lab Sample I	d: 644603-004		Date Collecte	d: 11.26.19 13.00	Sample	Depth: 4 ft	
Analytical Me	ethod: BTEX by EPA 802	1B			Prep M	ethod: SW5030B	
Tech:	MAB				% Mois	ture:	
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight	
Seq Number:	3109032						
Parameter		Cas Number	Result R	T.	Units Ans	lysis Date Flag	Г

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	11.27.19 13.49	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	11.27.19 13.49	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	11.27.19 13.49	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	11.27.19 13.49	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	11.27.19 13.49	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	11.27.19 13.49	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	11.27.19 13.49	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	116	%	70-130	11.27.19 13.49		
1,4-Difluorobenzene		540-36-3	97	%	70-130	11.27.19 13.49		



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:PH06Lab Sample Id:644603-005		Matrix: Date Collec	Soil cted: 11.26.19 14.25		Date Received:11.2 Sample Depth: 0.5	27.19 09.1 ft	0
Analytical Method:Chloride by EFTech:MABAnalyst:MABSeq Number:3109010	PA 300	Date Prep:	11.27.19 11.11		Prep Method: E30 % Moisture: Basis: Wet	0P Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	11.27.19 12.44	U	1
Analytical Method:TPH by SW80Tech:DTHAnalyst:DTHSeq Number:3109024	15 Mod	Date Prep:	11.27.19 11.00		Prep Method: SW3 % Moisture: Basis: Wet	8015P Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.27.19 12.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.27.19 12.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.27.19 12.05	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.27.19 12.05	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.27.19 12.05	U	1

шігп	FIIC033	<30.2	0.2		mg/kg	11.27.19 12.03	0
Surrogate	(% Rec Cas Number	overy	Units	Limits	Analysis Date	Flag
1-Chlorooctane	11	1-85-3	136	%	70-135	11.27.19 12.05	**
o-Terphenyl	84-	-15-1	135	%	70-135	11.27.19 12.05	



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH06	Matrix:	Soil	Date Received	1:11.27.19 09.10	
Lab Sample Id: 644603-005		Date Collected	: 11.26.19 14.25	Sample Depth	nple Depth: 0.5 ft	
Analytical Me	thod: BTEX by EPA 8021B			Prep Method:	SW5030B	
Tech:	MAB			% Moisture:		
Analyst:	MAB	Date Prep:	11.27.19 10.11	Basis:	Wet Weight	
Seq Number:	3109032					
_						

Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
71-43-2	< 0.00199	0.00199		mg/kg	11.27.19 14.08	U	1
108-88-3	< 0.00199	0.00199		mg/kg	11.27.19 14.08	U	1
100-41-4	< 0.00199	0.00199		mg/kg	11.27.19 14.08	U	1
179601-23-1	< 0.00398	0.00398		mg/kg	11.27.19 14.08	U	1
95-47-6	< 0.00199	0.00199		mg/kg	11.27.19 14.08	U	1
1330-20-7	< 0.00199	0.00199		mg/kg	11.27.19 14.08	U	1
	< 0.00199	0.00199		mg/kg	11.27.19 14.08	U	1
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
	460-00-4	108	%	70-130	11.27.19 14.08		
	540-36-3	105	%	70-130	11.27.19 14.08		
	Cas Number 71-43-2 108-88-3 100-41-4 179601-23-1 95-47-6 1330-20-7	Cas Number Result 71-43-2 <0.00199	Cas Number Result RL 71-43-2 <0.00199	Cas Number Result RL 71-43-2 <0.00199	Cas Number Result RL Units 71-43-2 <0.00199	Cas Number Result RL Units Analysis Date 71-43-2 <0.00199	Cas Number Result RL Units Analysis Date Flag 71-43-2 <0.00199

1-Chlorooctane

o-Terphenyl

Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH06A		Matrix:	Soil	Ι	Date Received:11.2	7.19 09.10	0
Lab Sample Id	l: 644603-006		Date Collec	eted: 11.26.19 14.35	S	Sample Depth: 4 ft		
Analytical Me	thod: Chloride by EP	A 300			F	Prep Method: E30)P	
Tech:	MAB				9	% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 11.11	H	Basis: Wet	Weight	
Seq Number:	3109010		1					
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	73.6	9.94	mg/kg	12.01.19 10.45	D	1
Analytical Me Tech: Analyst: Seq Number:	thod: TPH by SW801 DTH DTH 3109024	5 Mod	Date Prep:	11.27.19 11.00	F 9 F	Prep Method: SW8 6 Moisture: Basis: Wet	8015P Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range I	Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.28.19 08.13	U	1
Diesel Range Org	ganics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.28.19 08.13	U	1
Motor Oil Range H	ydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.28.19 08.13	U	1
Total GRO-DRO	1	PHC628	<50.1	50.1	mg/kg	11.28.19 08.13	U	1
Total TPH		PHC635	<50.1	50.1	mg/kg	11.28.19 08.13	U	1
Surrogate			% Cas Number	Recovery Units	Limits	Analysis Date	Flag	

104

112

%

%

70-135

70-135

11.28.19 08.13

11.28.19 08.13

111-85-3

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Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

Sample Id:	PH06A		Matrix:	Soil	Date Receive	ed:11.27.19 09.10
Lab Sample Id	d: 644603-006		Date Collected	1: 11.26.19 14.35	Sample Dept	h:4 ft
Analytical Me	ethod: BTEX by EPA 802	1B			Prep Method	: SW5030B
Tech:	MAB				% Moisture:	
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight
Seq Number:	3109032					
Parameter		Cas Number	Result D	r	Unita Analysia	Data Flag I

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	11.27.19 14.27	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	11.27.19 14.27	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	11.27.19 14.27	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	11.27.19 14.27	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	11.27.19 14.27	U	1
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	11.27.19 14.27	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	11.27.19 14.27	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	2	460-00-4	90	%	70-130	11.27.19 14.27		
1,4-Difluorobenzene	1	540-36-3	81	%	70-130	11.27.19 14.27		



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id: PH07		Matrix:	Soil	Date Received:11.27.19 09.10			
Lab Sample Id: 644603-007		Date Collec	cted: 11.26.19 14.45		Sample Depth: 0.5	ft	
Analytical Method: Chloride by EP	A 300				Prep Method: E30	0P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	11.27.19 11.11		Basis: Wet	Weight	
Seq Number: 3109010							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.82	9.82	mg/kg	11.27.19 13.07	U	1
Analytical Method:TPH by SW801Tech:DTHAnalyst:DTHSeq Number:3109024	15 Mod	Date Prep:	11.27.19 11.00		Prep Method: SW % Moisture: Basis: Wet	8015P Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.27.19 12.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.27.19 12.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.27.19 12.25	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.27.19 12.25	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.27.19 12.25	U	1
		%	Recovery				

Surrogate	Cas Number	very	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.27.19 12.25	
o-Terphenyl	84-15-1	108	%	70-135	11.27.19 12.25	



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH07		Matrix:	Soil	Dat	te Received:11.2	7.19 09.10
Lab Sample Id: 644603-007			Date Collecte	Sample Depth: 0.5 ft			
Analytical M	ethod: BTEX by EPA 802	1B			Pre	p Method: SW:	5030B
Tech:	MAB				%]	Moisture:	
Analyst:	MAB		Date Prep:	11.27.19 10.11	Bas	sis: Wet	Weight
Seq Number:	3109032						
Parameter		Cas Number	Result R	L	Units	Analysis Date	Flag D

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	11.27.19 14.46	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	11.27.19 14.46	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	11.27.19 14.46	U	1
m,p-Xylenes	179601-23-1	< 0.00404	0.00404		mg/kg	11.27.19 14.46	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	11.27.19 14.46	U	1
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	11.27.19 14.46	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	11.27.19 14.46	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	103	%	70-130	11.27.19 14.46		
1,4-Difluorobenzene		540-36-3	96	%	70-130	11.27.19 14.46		



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

Sample Id:	PH07A		Matrix:	Soil		Date Received:1	1.27.19 09.10)
Lab Sample Io	l: 644603-008		Date Collec	ted: 11.26.19 15.10		Sample Depth: 4	ft	
Analytical Me	thod: Chloride by EPA	300				Prep Method: E	300P	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 11.11		Basis: W	/et Weight	
Seq Number:	3109010		-					
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	17.3	9.94	mg/kg	11.27.19 13.12		1
Analytical Me	thod: TPH by SW80151	Mod				Pren Method: S	W8015P	
Tech.	DTH	viou				% Moisture:	W00151	
Δnalvst	DTH		Data Prop.	11 27 19 11 00		Basis: W	let Weight	
Seq Number:	3109024		Date Flep.	11.27.17 11.00		Dasis. W	fet weight	
Parameter		Cas Number	Result	RI	Unite	Analysis Date	Flag	Dil

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	11.27.19 12.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	11.27.19 12.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	11.27.19 12.25	U	1
Total GRO-DRO	PHC628	<49.9	49.9		mg/kg	11.27.19 12.25	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	11.27.19 12.25	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	11-85-3	122	%	70-135	11.27.19 12.25		
o-Terphenyl	8	4-15-1	131	%	70-135	11.27.19 12.25		

Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

Sample Id:	PH07A		Matrix:	Soil	Date I	Received:11.27.1	9 09.10
Lab Sample I	Lab Sample Id: 644603-008			d: 11.26.19 15.10	Sample Depth: 4 ft		
Analytical Me	ethod: BTEX by EPA 802	1B			Prep M	Method: SW503	0 B
Tech:	MAB				% Mo	isture:	
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet We	eight
Seq Number:	3109032						
Parameter		Cas Number	Result R	T.	Unite A	nalvcic Data – F	ղ ով

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	11.27.19 15.05	U	1	_
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	11.27.19 15.05	U	1	
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	11.27.19 15.05	U	1	
m,p-Xylenes	179601-23-1	< 0.00404	0.00404		mg/kg	11.27.19 15.05	U	1	
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	11.27.19 15.05	U	1	
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	11.27.19 15.05	U	1	
Total BTEX		< 0.00202	0.00202		mg/kg	11.27.19 15.05	U	1	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	2	460-00-4	107	%	70-130	11.27.19 15.05			
1,4-Difluorobenzene	4	540-36-3	101	%	70-130	11.27.19 15.05			



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH08		Matrix:	Soil		Date Received:11.2	27.19 09.1	0
Lab Sample Id	: 644603-009		Date Collec	tted: 11.26.19 15.20		Sample Depth: 0.5	ft	
Analytical Me	thod: Chloride by EP	A 300				Prep Method: E30	0P	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 11.11		Basis: Wet	Weight	
Seq Number:	3109010							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	14.0	9.98	mg/kg	11.27.19 13.18		1
Analytical Mer Tech: Analyst: Seq Number:	thod: TPH by SW80 DTH DTH 3109024	15 Mod	Date Prep:	11.27.19 11.00		Prep Method: SW3 % Moisture: Basis: Wet	8015P Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range H	Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.27.19 12.45	U	1
Diesel Range Org	ganics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.27.19 12.45	U	1
Motor Oil Range H	ydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.27.19 12.45	U	1
Total GRO-DRO		PHC628	<50.2	50.2	mg/kg	11.27.19 12.45	U	1
Total TPH		PHC635	<50.2	50.2	mg/kg	11.27.19 12.45	U	1

	%]					
Surrogate	Cas Number	·	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	138	%	70-135	11.27.19 12.45	**
o-Terphenyl	84-15-1	138	%	70-135	11.27.19 12.45	**



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

Sample Id:	PH08		Matrix:	Soil	Date Received	:11.27.19 09.10	
Lab Sample Id: 644603-009			Date Collected: 11.26.19 15.20		Sample Depth: 0.5 ft		
Analytical Me	thod: BTEX by EPA 8021	В			Prep Method:	SW5030B	
Tech:	MAB				% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight	
Seq Number:	3109032						
D		Cas Namelan I) aguit DI				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	11.27.19 15.24	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	11.27.19 15.24	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	11.27.19 15.24	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	11.27.19 15.24	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	11.27.19 15.24	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	11.27.19 15.24	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	11.27.19 15.24	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	115	%	70-130	11.27.19 15.24		
1,4-Difluorobenzene		540-36-3	105	%	70-130	11.27.19 15.24		



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:PH08ALab Sample Id:644603-010			Matrix:	Soil		Date Received:11.27.19 09.10			
			Date Collec	Date Collected: 11.26.19 15.30			Sample Depth: 4 ft		
Analytical Me	thod: Chloride by EP	PA 300				Prep Method: E30)0P		
Tech:	MAB					% Moisture:			
Analyst:	MAB		Date Prep:	11.27.19 11.11		Basis: We	t Weight		
Seq Number:	3109010								
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride		16887-00-6	54.3	10.0	mg/kg	11.27.19 13.23		1	
Applytical Ma	thad. TDU by CW/90	15 Mod				Drog Mathada SW	29015D		
Analytical Method: TPH by SW8015 Mod						Moisture:	8013P		
Analyst: Seq Number:	DTH DTH 3109024		Date Prep:	11.27.19 11.00		Basis: We	t Weight		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Gasoline Range I	Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.27.19 12.45	U	1	
Diesel Range Org	ganics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.27.19 12.45	U	1	
Motor Oil Range H	ydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.27.19 12.45	U	1	
Total GRO-DRO)	PHC628	<50.3	50.3	mg/kg	11.27.19 12.45	U	1	

Total TPH	PHC635	<50.3	50.3		mg/kg	11.27.19 12.45	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	117	%	70-135	11.27.19 12.45		
o-Terphenyl		84-15-1	128	%	70-135	11.27.19 12.45		
Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH08A	Matrix:	Soil	Date Received	:11.27.19 09.10	
Lab Sample Id: 644603-010		Date Collected	: 11.26.19 15.30	Sample Depth: 4 ft		
Analytical Me Tech:	thod: BTEX by EPA 8021B MAB			Prep Method: % Moisture:	SW5030B	
Analyst:	MAB	Date Prep:	11.27.19 10.11	Basis:	Wet Weight	
Seq Number:	3109032					
_						

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	11.27.19 15.43	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	11.27.19 15.43	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	11.27.19 15.43	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	11.27.19 15.43	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	11.27.19 15.43	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	11.27.19 15.43	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	11.27.19 15.43	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	4	460-00-4	114	%	70-130	11.27.19 15.43		
1,4-Difluorobenzene	:	540-36-3	105	%	70-130	11.27.19 15.43		



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id: PH09 Lab Sample Id: 644603-011		Matrix: Date Collec	Soil eted: 11.26.19 15.40		Date Received:11.2 Sample Depth: 0.5	27.19 09.1 ft	0
Analytical Method: ChlorideTech:MABAnalyst:MABSeq Number:3109010	by EPA 300	Date Prep: 11.27.19 11.11		Prep Method: E300P % Moisture: Basis: Wet Weigh		0P Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.6	50.3	mg/kg	11.27.19 13.29		5
Analytical Method: TPH by S Tech: DTH Analyst: DTH Seq Number: 3109024	W8015 Mod	Date Prep:	11.27.19 11.00		Prep Method: SW3 % Moisture: Basis: Wet	8015P Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GR	O) PHC610	<49.8	49.8	mg/kg	11.27.19 13.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.27.19 13.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.27.19 13.05	U	1
Total GRO-DRO	DUCEN	<10.8	40.8		11 27 10 12 05	TT	
	FHC028	\49.0	49.8	mg/kg	11.27.19 13.03	U	1

	% Rec					
Surrogate	Cas Number		Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.27.19 13.05	
o-Terphenyl	84-15-1	128	%	70-135	11.27.19 13.05	



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH09		Matrix:	Soil	Date Received	:11.27.19 09.10		
Lab Sample Id: 644603-011			Date Collected	: 11.26.19 15.40	Sample Depth: 0.5 ft			
Analytical Me	thod: BTEX by EPA 8021	В			Prep Method:	SW5030B		
Tech:	MAB				% Moisture:			
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight		
Seq Number:	3109032							
Paramatar		Cas Number	Recult DI	Tinita	Analysia D	ata Elag D		

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00197	0.00197		mg/kg	11.27.19 17.43	U	1
Toluene	108-88-3	< 0.00197	0.00197		mg/kg	11.27.19 17.43	U	1
Ethylbenzene	100-41-4	< 0.00197	0.00197		mg/kg	11.27.19 17.43	U	1
m,p-Xylenes	179601-23-1	< 0.00394	0.00394		mg/kg	11.27.19 17.43	U	1
o-Xylene	95-47-6	< 0.00197	0.00197		mg/kg	11.27.19 17.43	U	1
Xylenes, Total	1330-20-7	< 0.00197	0.00197		mg/kg	11.27.19 17.43	U	1
Total BTEX		< 0.00197	0.00197		mg/kg	11.27.19 17.43	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	106	%	70-130	11.27.19 17.43		
1,4-Difluorobenzene		540-36-3	89	%	70-130	11.27.19 17.43		



Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH09A		Matrix:	Soil		Date Received:11.2	7.19 09.10	i.
Lab Sample Id	1: 644603-012		Date Collec	cted: 11.26.19 15.50				
Analytical Me	ethod: Chloride by EPA	300				Prep Method: E30	0P	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 11.11		Basis: Wet	Weight	
Seq Number:	3109010							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	73.1	9.92	mg/kg	12.01.19 11.08	D	1

Analytical Method: TPH by SW8015	Mod				Р	rep Method: SW	8015P	
Tech: DTH					%	Moisture:		
Analyst: DTH		Date Prep:	11.27.	19 11.00	В	asis: Wet	Weight	
Seq Number: 3109024								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	11.27.19 13.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	11.27.19 13.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	11.27.19 13.25	U	1
Total GRO-DRO	PHC628	<49.8	49.8		mg/kg	11.27.19 13.25	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	11.27.19 13.25	U	1
Surrogate		% Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	11-85-3	138	%	70-135	11.27.19 13.25	**	
o-Terphenyl	84	4-15-1	140	%	70-135	11.27.19 13.25	**	

Certificate of Analytical Results 644603

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	PH09A		Matrix:	Soil	Date Received	:11.27.19 09.10		
Lab Sample Id	: 644603-012		Date Collected	: 11.26.19 15.50	Sample Depth: 4 ft			
Analytical Me	thod: BTEX by EPA 8021	В			Prep Method:	SW5030B		
Tech:	MAB				% Moisture:			
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight		
Seq Number:	3109032							
D		C N T) aguit DI					

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00196	0.00196		mg/kg	11.27.19 18.02	U	1
Toluene	108-88-3	< 0.00196	0.00196		mg/kg	11.27.19 18.02	U	1
Ethylbenzene	100-41-4	< 0.00196	0.00196		mg/kg	11.27.19 18.02	U	1
m,p-Xylenes	179601-23-1	< 0.00393	0.00393		mg/kg	11.27.19 18.02	U	1
o-Xylene	95-47-6	< 0.00196	0.00196		mg/kg	11.27.19 18.02	U	1
Xylenes, Total	1330-20-7	< 0.00196	0.00196		mg/kg	11.27.19 18.02	U	1
Total BTEX		< 0.00196	0.00196		mg/kg	11.27.19 18.02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	2	460-00-4	108	%	70-130	11.27.19 18.02		
1,4-Difluorobenzene	5	540-36-3	102	%	70-130	11.27.19 18.02		



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 Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	atory 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.

RDX Federal 17-35H

Analytical Method:	Chloride by EPA 30	0						P	rep Meth	od: E30	OP	
Seq Number:	3109010]	Matrix:	Solid				Date Pr	ep: 11.2	7.19	
MB Sample Id:	7691326-1-BLK		LCS San	ple Id:	7691326-1	-BKS		LCS	D Sample	e Id: 769	1326-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	uit Units	Analysis Date	Flag
Chloride	<10.0	250	256	102	260	104	90-110	2	20	mg/kg	11.27.19 11:59	

Analytical Method:	Chloride by	EPA 30	0						Pı	ep Meth	od: E30	0P	
Seq Number:	3109010			ľ	Matrix:	Soil				Date Pr	ep: 11.2	7.19	
Parent Sample Id:	644603-001			MS Sam	ple Id:	644603-00	1 S		MS	D Sample	e Id: 644	503-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride		186	199	365	90	363	89	90-110	1	20	mg/kg	11.27.19 12:16	Х

Analytical Method:	Chloride by H	EPA 300							Pr	ep Metho	d: E30	00P	
Seq Number:	3109010			Ν	Aatrix:	Soil				Date Pre	p: 11.	27.19	
Parent Sample Id:	644603-011			MS Sam	ple Id:	644603-01	1 S		MSI	O Sample	Id: 644	603-011 SD	
Parameter	P I	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	it Units	Analysis Date	Flag
Chloride		50.6	202	237	92	234	92	90-110	1	20	mg/kg	11.27.19 13:35	

Analytical Method:	TPH by S	W8015 M	od						P	rep Method	l: SW	8015P	
Seq Number:	3109024				Matrix:	Solid				Date Prep): 11.	27.19	
MB Sample Id:	7691369-1	-BLK		LCS San	nple Id:	7691369-	l-BKS		LCS	D Sample l	ld: 769	1369-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	<50.0	1000	1050	105	905	91	70-135	15	35	mg/kg	11.27.19 10:43	
Diesel Range Organics ((DRO)	<50.0	1000	1200	120	1110	111	70-135	8	35	mg/kg	11.27.19 10:43	
Surrogate		MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSI %Re	D LCS c Flag	D I g	limits	Units	Analysis Date	
1-Chlorooctane		105		1	33		127		7	0-135	%	11.27.19 10:43	
o-Terphenyl		112		1	34		130		7	0-135	%	11.27.19 10:43	

Analytical Method: Seq Number:	TPH by SW8015 Mod 3109024	Matrix: MB Sample Id:	Solid 7691369-1-BLK	Prep Method: Date Prep:	SW8 11.27	015P 7.19	
Parameter		MB Result		τ	J nits	Analysis Date	Flag
Motor Oil Range Hydrocarb	ons (MRO)	<50.0		m	ıg/kg	11.27.19 10:24	

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

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LT Environmental, Inc.

RDX Federal 17-35H

Analytical Method:	TPH by SW	/8015 Mo	bd						Р	rep Method	l: SW	8015P			
Seq Number:	3109024]	Matrix:	Soil				Date Prep): 11.2	7.19	Flag		
Parent Sample Id:	644603-001			MS San	nple Id:	644603-00	01 S		MS	D Sample I	d: 644	603-001 SD			
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag		
Gasoline Range Hydrocarbo	ons (GRO)	<49.9	998	905	91	1000	100	70-135	10	35	mg/kg	11.27.19 11:03			
Diesel Range Organics (DRO)	<49.9	998	1110	111	1150	115	70-135	4	35	mg/kg	11.27.19 11:03			
Surrogate				N %]	IS Rec	MS Flag	MSD %Re	o MSD c Flag	L	imits	Units	Analysis Date			
1-Chlorooctane				1	19		132		7	0-135	%	11.27.19 11:03			
o-Terphenyl				11	27		131		7	0-135	%	11.27.19 11:03			

Analytical Method:	BTEX by EPA 8021	В]	Prep Meth	nod: SW:	5030B	
Seq Number:	3109032		1	Matrix:	Solid				Date P	rep: 11.2	7.19	
MB Sample Id:	7691377-1-BLK		LCS San	ple Id:	7691377-	I-BKS		LC	SD Sampl	e Id: 769	1377-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI) RPD Lir	nit Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.0900	90	0.0916	92	70-130	2	35	mg/kg	11.27.19 11:09	
Toluene	< 0.00200	0.100	0.0920	92	0.0930	93	70-130	1	35	mg/kg	11.27.19 11:09	
Ethylbenzene	< 0.00200	0.100	0.0906	91	0.0918	92	71-129	1	35	mg/kg	11.27.19 11:09	
m,p-Xylenes	< 0.00400	0.200	0.194	97	0.197	99	70-135	2	35	mg/kg	11.27.19 11:09	
o-Xylene	< 0.00200	0.100	0.0987	99	0.100	100	71-133	1	35	mg/kg	11.27.19 11:09	
Surrogate	MB %Rec	MB Flag	L0 %]	CS Rec	LCS Flag	LCSI %Re	D LCS c Flag	D i g	Limits	Units	Analysis Date	
1,4-Difluorobenzene	100		10	00		102			70-130	%	11.27.19 11:09	
4-Bromofluorobenzene	101		10	08		111		,	70-130	%	11.27.19 11:09	

Analytical Method:	BTEX by EPA 8021	B]	Prep Meth	nod: SW:	5030B	
Seq Number:	3109032			Matrix:	Soil				Date P	rep: 11.2	.7.19	
Parent Sample Id:	644603-001		MS San	nple Id:	644603-00	01 S		Μ	SD Sampl	le Id: 644	603-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI) RPD Lin	nit Units	Analysis Date	Flag
Benzene	< 0.00202	0.101	0.0925	92	0.102	101	70-130	10	35	mg/kg	11.27.19 11:47	
Toluene	< 0.00202	0.101	0.0934	92	0.103	102	70-130	10	35	mg/kg	11.27.19 11:47	
Ethylbenzene	< 0.00202	0.101	0.0918	91	0.101	100	71-129	10	35	mg/kg	11.27.19 11:47	
m,p-Xylenes	< 0.00403	0.202	0.197	98	0.215	106	70-135	9	35	mg/kg	11.27.19 11:47	
o-Xylene	< 0.00202	0.101	0.101	100	0.110	109	71-133	9	35	mg/kg	11.27.19 11:47	
Surrogate			N %	AS Rec	MS Flag	MSD %Ree	o MSD c Flag)	Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	00		105		,	70-130	%	11.27.19 11:47	
4-Bromofluorobenzene			1	09		113			70-130	%	11.27.19 11:47	

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

Final 1.000

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

Bypen (MMUL)	Incle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCF Instars of this document and relinquishment of samples constitutes a valid purchase order from client to xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample bubmitty	PH08A S V 1530 4'	PHO8 5 1520 0.51	PHOTA S ISIO U'	PHOLA S H35 41	PHOL S 1425 0.5'	PHOSA S 1800 4'	Phos S 1135 0.5/	2HO4A S 1 17.25 41	PHOY S W/26/19 1215 0.5'	Sample Identification Matrix Date Time	nple Custody Seals: Yes Mb N/A Total Containers: 17	Polar Custodi Social V. B. Mo T - J. M DOT	Temperature (°C): 0.10 Thermometer ID	LE RECEIPT Temp Blank: Yes No Wet Ice: Kes No	PO # 220 - 5649 Quote #:	Impler's Name: Anna lanco and anna Due Date:	oject Location Proval Eddy Annual Provide Annual	roject Number: 034 819 0416	Project Name: RDX Coderal 17 Roll T.	Phone: 940 285 9985 Email: Email: Email:	City, State ZIP: RIG CH 81650 City, St	Address: 820 Megan Are, Unit B	company Name: LT Environmental Compan	roject Manager: Chris McKisson Bill to:
Date/Time Relinquished by: (Signature)	s 11 AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg 2A Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag 25 and 26									- Nur TP BT CL	nber H (TEX 1100	efi efi de	ntair A A C I	Bon Bon Epi	A 2) () ()		Code	Pres. ANALYSIS REQ	and How wom a syes of tenv. com		tate ZIP:	Address:	y Name: LT Environmental	It different (Smis Mckissen
Received by: (Signature)	J Mn Mo Ni K Se Ag SiO2 Na Sr TI Sn U V Z TI U 1631/245.1/747(sand conditions yyond the control negotiated.									Sample Co	received b	TAT starts the decision	NaOH: Na	HCL: HL	H2S04: H2	HNO3: HN	None: NO	MeOH: Me	UEST Preserval	Deliverables: EDD ADaPT Other:			State of Project:	Work Order Comments	1689-6701 WNW.xenco.com Page

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Project Manager: Chr.is MckLisson Bill to: (it allfreem) Chr.is MckLisson Project Gompany Name: LT Environ mental Gompany Name: LT Environ mental Program: UST/PST Address: Bilt to: (it allfreem) LT Environ mental Torm Andress: Program: UST/PST State of Project: City, state ZIP: Riche, CO Blu650 City, state ZIP: Address: Project: Reporting:Level II L Project Name: RDx Federal IT-3SH Turn Around Project: NANLYSIS REQUEST Deliverables: EDD Deliverables: EDD Deliverables: EDD Sampler's Name: Anna Bule 1 Bue Date: Project Size No Deliverables: EDD Deliverables: EDD Deliverables: EDD Deliverables: EDD Size No	7		PA e	onta			New !	'es No	Received Intact:	
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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 11/27/2019 09:10:00 AM Temperature Measuring device used : T-NM-007 Work Order #: 644603

Sa	mple Receipt Checklist
#1 *Temperature of cooler(s)?	.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 labe	s/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)?	Νο
#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: 11/27/2019

Comments

Checklist reviewed by: Jessica WAMER Jessica Kramer

Date: 11/27/2019

Page 36 of 36

Analytical Report 644605

for

LT Environmental, Inc.

Project Manager: Chris McKisson

RDX Federal 17-35H

034819046

02-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)



02-DEC-19

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

Reference: XENCO Report No(s): 644605 RDX Federal 17-35H Project Address: Rural Eddy County

Chris McKisson:

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) 644605. 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. 644605 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Vermer

 Jessica Kramer

 Project Assistant

 Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies.

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Sample Id

FS03 FS04 FS05 FS06 FS07 FS08 FS09 SW01 SW02 SW03 SW04



LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	11-26-19 11:25	4 ft	644605-001
S	11-26-19 11:30	4 ft	644605-002
S	11-26-19 11:35	4 ft	644605-003
S	11-26-19 16:15	0.5 - 2 ft	644605-004
S	11-26-19 16:20	0.5 - 2 ft	644605-005
S	11-26-19 16:25	0.5 - 2 ft	644605-006
S	11-26-19 16:30	0.5 - 2 ft	644605-007
S	11-26-19 11:40	0.5 - 4 ft	644605-008
S	11-26-19 11:45	0.5 - 4 ft	644605-009
S	11-26-19 11:50	0.5 - 4 ft	644605-010
S	11-26-19 12:00	0.5 - 4 ft	644605-011



CASE NARRATIVE

Client Name: LT Environmental, Inc. Project Name: RDX Federal 17-35H

 Project ID:
 034819046

 Work Order Number(s):
 644605

 Report Date:
 02-DEC-19

 Date Received:
 11/27/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109016 Chloride by EPA 300

Lab Sample ID 644608-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 644605-007, -008, -009, -010, -011. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3109024 TPH by SW8015 Mod

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

Samples affected are: 644605-002.

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

Samples affected are: 644605-002,644605-007.

Batch: LBA-3109032 BTEX by EPA 8021B

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

Batch: LBA-3109033 BTEX by EPA 8021B

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



Project Id:	034819046
Contact:	Chris McKisson
Project Location:	Rural Eddy County

Certificate of Analysis Summary 644605

LT Environmental, Inc., Arvada, CO Project Name: RDX Federal 17-35H

Date Received in Lab:Wed Nov-27-19 09:10 amReport Date:02-DEC-19Project Manager:Jessica Kramer

	Lab Id:	644605-0	001	644605-0	002	644605-	003	644605-	004	644605-005		644605-006	
Analysis Requested	Field Id:	FS03		FS04		FS05		FS06	5	FS07		FS08	
Analysis Kequesieu	Depth:	4- ft		4- ft		4- ft		0.5-2	ft	0.5-2 1	ť	0.5-2 f	ft
	Matrix:	SOIL	,	SOIL		SOIL		SOII	_	SOIL		SOIL	
	Sampled:	Nov-26-19	11:25	Nov-26-19	11:30	Nov-26-19	11:35	Nov-26-19	16:15	Nov-26-19	16:20	Nov-26-19	16:25
BTEX by EPA 8021B	Extracted:	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	10:11
	Analyzed:	Nov-27-19	18:21	Nov-27-19	18:40	Nov-27-19	18:59	Nov-27-19	19:18	Nov-27-19	19:38	Nov-27-19	19:57
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00197	0.00197	< 0.00202	0.00202
Toluene		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00197	0.00197	< 0.00202	0.00202
Ethylbenzene		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00197	0.00197	< 0.00202	0.00202
m,p-Xylenes		< 0.00397	0.00397	< 0.00399	0.00399	< 0.00398	0.00398	< 0.00395	0.00395	< 0.00394	0.00394	< 0.00403	0.00403
o-Xylene		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00197	0.00197	< 0.00202	0.00202
Xylenes, Total		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00197	0.00197	< 0.00202	0.00202
Total BTEX		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00197	0.00197	< 0.00202	0.00202
Chloride by EPA 300	Extracted:	Nov-27-19	11:11	Nov-27-19	11:11	Nov-27-19	11:11	Nov-27-19	11:11	Nov-27-19	11:11	Nov-27-19	11:11
	Analyzed:	Nov-27-19	13:57	Nov-27-19	14:14	Nov-27-19	14:19	Nov-27-19	14:25	Nov-27-19	14:30	Nov-27-19	14:36
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2100	200	894	100	1160	201	15800	501	9250	502	5600	200
TPH by SW8015 Mod	Extracted:	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	11:00
	Analyzed:	Nov-27-19	13:25	Nov-27-19	13:45	Nov-27-19	13:45	Nov-27-19	14:05	Nov-27-19	14:05	Nov-27-19	14:25
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0
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	<50.0	50.0
Total GRO-DRO		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0
Total TPH		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8	<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.

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fession kramer

Jessica Kramer Project Assistant

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Final 1.000



Project Id:	034819046
Contact:	Chris McKisson
Project Location:	Rural Eddy County

Certificate of Analysis Summary 644605

LT Environmental, Inc., Arvada, CO Project Name: RDX Federal 17-35H

Date Received in Lab:Wed Nov-27-19 09:10 amReport Date:02-DEC-19Project Manager:Jessica Kramer

	Lab Id:	644605-0	007	644605-0	008	644605-0	009	644605-0	010	644605-0	011	
Analysis Requested	Field Id:	FS09		SW01		SW02	2	SW03	;	SW04	Ļ	
Analysis Requested	Depth:	0.5-2 1	ît	0.5-4 f	ìt	0.5-4 f	ît	0.5-4 1	ìt	0.5-4 f	Ìt	
	Matrix:	SOIL	,	SOIL	,	SOIL	,	SOIL	,	SOIL		
s	Sampled:	Nov-26-19	16:30	Nov-26-19	11:40	Nov-26-19	11:45	Nov-26-19	11:50	Nov-26-19	12:00	
BTEX by EPA 8021B	xtracted:	Nov-27-19	10:11	Nov-27-19	10:11	Nov-27-19	14:11	Nov-27-19	14:11	Nov-27-19	14:11	
A	Analyzed:	Nov-27-19	20:16	Nov-27-19	20:35	Nov-28-19	00:00	Nov-27-19	23:40	Nov-28-19	00:19	
	Units/RL:	mg/kg	RL									
Benzene		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00201	0.00201	
Toluene		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00201	0.00201	
Ethylbenzene		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00201	0.00201	
m,p-Xylenes		< 0.00402	0.00402	< 0.00403	0.00403	< 0.00403	0.00403	< 0.00401	0.00401	< 0.00402	0.00402	
o-Xylene		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00201	0.00201	
Xylenes, Total		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00201	0.00201	
Total BTEX		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00201	0.00201	
Chloride by EPA 300 Ex	xtracted:	Nov-27-19	13:11									
A	Analyzed:	Nov-27-19	15:09	Nov-27-19	15:26	Nov-27-19	15:32	Nov-27-19	15:43	Nov-27-19	15:49	
	Units/RL:	mg/kg	RL									
Chloride		7540	499	1930	99.4	1040	50.4	103	10.1	1080	100	
TPH by SW8015 Mod Ex	xtracted:	Nov-27-19	11:00	Nov-27-19	11:00	Nov-27-19	13:00	Nov-27-19	13:00	Nov-27-19	13:00	
A	Analyzed:	Nov-27-19	14:25	Nov-27-19	14:45	Nov-27-19	15:25	Nov-27-19	16:04	Nov-27-19	16:04	
	Units/RL:	mg/kg	RL									
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.2	50.2	<50.0	50.0	<50.1	50.1	<49.9	49.9	·
Diesel Range Organics (DRO)		<50.0	50.0	<50.2	50.2	<50.0	50.0	<50.1	50.1	<49.9	49.9	
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.2	50.2	<50.0	50.0	<50.1	50.1	<49.9	49.9	
Total GRO-DRO		<50.0	50.0	<50.2	50.2	<50.0	50.0	<50.1	50.1	<49.9	49.9	
Total TPH		<50.0	50.0	<50.2	50.2	<50.0	50.0	<50.1	50.1	<49.9	49.9	

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.

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Version: 1.%

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Jessica Kramer Project Assistant

Final 1.000



Flag

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Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

Sample Id: FS03		Matrix:	Soil	Date Received:11.27.19 09.10					
Lab Sample Id: 644605-001		Date Collec	cted: 11.26.19 11.25		Sample Depth: 4 ft				
Analytical Method: Chloride by EP	A 300				Prep Method: E30	0P			
Tech: MAB					% Moisture:				
Analyst: MAB		Date Prep:	11.27.19 11.11		Basis: Wet	Weight	Veight		
Seq Number: 3109010		1							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil		
Chloride	16887-00-6	2100	200	mg/kg	11.27.19 13.57		20		
Analytical Method:TPH by SW801Tech:DTHAnalyst:DTHSeq Number:3109024	5 Mod	Date Prep:	11.27.19 11.00		Prep Method: SW % Moisture: Basis: Wet	8015P Weight			
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil		
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.27.19 13.25	U	1		
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.27.19 13.25	U	1		
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.27.19 13.25	U	1		
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.27.19 13.25	U	1		
Total TPH	PHC635	<50.0	50.0	mg/kg	11.27.19 13.25	U	1		
		0/_	Recovery						

Surrogate	Cas Number		Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	118	%	70-135	11.27.19 13.25
o-Terphenyl	84-15-1	126	%	70-135	11.27.19 13.25

Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

Sample Id:	FS03		Matrix:	Soil		Date Received	1:11.27.19 09.1	0
Lab Sample I	d: 644605-001		Date Collecte	d: 11.26.19 11.25		Sample Depth	:4 ft	
Analytical M	ethod: BTEX by EPA 802	1B				Prep Method:	SW5030B	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 10.11		Basis:	Wet Weight	
Seq Number:	3109032							
Parameter		Cas Number	Result F	RL	Units	Analysis D	ate Flag	Dil

1 di dificter	Cas rumber	ittesuit	KL		Units	Analysis Date	Flag	Di
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	11.27.19 18.21	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	11.27.19 18.21	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	11.27.19 18.21	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	11.27.19 18.21	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	11.27.19 18.21	U	1
Xylenes, Total	1330-20-7	< 0.00198	0.00198		mg/kg	11.27.19 18.21	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	11.27.19 18.21	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	116	%	70-130	11.27.19 18.21		
1,4-Difluorobenzene		540-36-3	104	%	70-130	11.27.19 18.21		

1-Chlorooctane

o-Terphenyl



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	FS04		Matrix:	Soil		Date Received:11.27.19 09.10				
Lab Sample Io	1: 644605-002		Date Colle	ected: 11.26.	.19 11.30	S	Sample Depth: 4 ft			
Analytical Me	ethod: Chloride by EP	PA 300				F	Prep Method: E30	0P		
Tech:	MAB					9	% Moisture:			
Analyst:	MAB		Date Prep	11.27	.19 11.11	E	Basis: Wet	Weight		
Seq Number:	3109010							U		
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Chloride		16887-00-6	894	100		mg/kg	11.27.19 14.14		10	
Analytical Me Tech: Analyst: Seq Number:	ethod: TPH by SW801 DTH DTH 3109024	15 Mod	Date Prep	: 11.27.	.19 11.00	F 9 E	Prep Method: SW8 % Moisture: Basis: Wet	8015P Weight		
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Gasoline Range	Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	11.27.19 13.45	U	1	
Diesel Range Or	ganics (DRO)	C10C28DRO	<50.0	50.0		mg/kg	11.27.19 13.45	U	1	
Motor Oil Range H	lydrocarbons (MRO)	PHCG2835	<50.0	50.0		mg/kg	11.27.19 13.45	U	1	
Total GRO-DRC)	PHC628	<50.0	50.0		mg/kg	11.27.19 13.45	U	1	
Total TPH		PHC635	<50.0	50.0		mg/kg	11.27.19 13.45	U	1	
Surrogate			% Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		

143

146

%

%

70-135

70-135

11.27.19 13.45

11.27.19 13.45

** **

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111-85-3

84-15-1

Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

Sample Id:	FS04		Matrix:	Soil	Date Receive	d:11.27.19 09.10
Lab Sample I	d: 644605-002		Date Collecte	d: 11.26.19 11.30	Sample Dept	h:4 ft
Analytical Me	ethod: BTEX by EPA 802	1B			Prep Method	: SW5030B
Tech:	MAB				% Moisture:	
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight
Seq Number:	3109032					
Parameter		Cas Number	Result D	T TI	nita Analysia I	Data Flag I

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	11.27.19 18.40	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	11.27.19 18.40	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	11.27.19 18.40	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	11.27.19 18.40	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	11.27.19 18.40	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	11.27.19 18.40	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	11.27.19 18.40	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	103	%	70-130	11.27.19 18.40		
4-Bromofluorobenzene		460-00-4	113	%	70-130	11.27.19 18.40		



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id: FS05		Matrix:	Soil		Date Received:11.2	27.19 09.10	С
Lab Sample Id: 644605-003		Date Collec	cted: 11.26.19 11.35		Sample Depth: 4 ft		
Analytical Method: Chloride by EP	PA 300				Prep Method: E30	0P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	11.27.19 11.11		Basis: Wet	Weight	
Seq Number: 3109010		1					
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1160	201	mg/kg	11.27.19 14.19		20
Analytical Method: TPH by SW80	15 Mod				Prep Method: SW	8015P	
Tech: DTH					% Moisture:		
Analyst: DTH		Date Prep:	11.27.19 11.00		Basis: Wet	Weight	
Seq Number: 3109024						e	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.27.19 13.45	U	1
	CLOCODDO	10.0	10.0	a	11 25 10 12 15		

DTU			% Moisture:						
		Date Prep:	11.27.	19 11.00	В	asis: W	et Weight		
3109024									
	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
drocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	11.27.19 13.45	U	1	
nics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	11.27.19 13.45	U	1	
lrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	11.27.19 13.45	U	1	
	PHC628	<49.9	49.9		mg/kg	11.27.19 13.45	U	1	
	PHC635	<49.9	49.9		mg/kg	11.27.19 13.45	U	1	
	,	% Cas Number	Recovery	Units	Limits	Analysis Date	e Flag		
ne	11	1-85-3	123	%	70-135	11.27.19 13.45			
	84	-15-1	129	%	70-135	11.27.19 13.45			
	DTH 3109024 /drocarbons (GRO) nics (DRO) lrocarbons (MRO)	DTH 3109024 Cas Number /drocarbons (GRO) PHC610 nics (DRO) C10C28DRO Irocarbons (MRO) PHCG2835 PHC628 PHC628 PHC635 ne 11 84	DTH Date Prep: 3109024 Cas Number Result /drocarbons (GRO) PHC610 <49.9	DIH Date Prep: 11.27. 3109024 Cas Number Result RL /drocarbons (GRO) PHC610 <49.9	DIH Date Prep: 11.27.19 11.00 3109024 Cas Number Result RL /drocarbons (GRO) PHC610 <49.9	DIH Date Prep: 11.27.19 11.00 B 3109024 Cas Number Result RL Units /drocarbons (GRO) PHC610 <49.9	DIH Date Prep: 11.27.19 11.00 Basis: W 3109024 Cas Number Result RL Units Analysis Date /drocarbons (GRO) PHC610 <49.9 49.9 mg/kg 11.27.19 13.45 nics (DRO) C10C28DRO <49.9	Date Prep: 11.27.19 11.00 Basis: Wet Weight 3109024 Cas Number Result RL Units Analysis Date Flag /drocarbons (GRO) PHC610 <49.9	

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Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

Sample Id:	FS05		Matrix:	Soil	Date Re	ceived:11.27.19 09.1	0
Lab Sample Id: 644605-003			Date Collected: 11.26.19 11.35		Sample	Depth: 4 ft	
Analytical Me	ethod: BTEX by EPA 802	1B			Prep Me	ethod: SW5030B	
Tech:	MAB				% Mois	ture:	
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight	
Seq Number:	3109032						
Parameter		Cas Number	Result R	T.	Unite Ana	lycic Data Flag	г

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	11.27.19 18.59	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	11.27.19 18.59	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	11.27.19 18.59	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	11.27.19 18.59	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	11.27.19 18.59	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	11.27.19 18.59	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	11.27.19 18.59	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	2	460-00-4	113	%	70-130	11.27.19 18.59		
1,4-Difluorobenzene	5	540-36-3	103	%	70-130	11.27.19 18.59		

1-Chlorooctane

o-Terphenyl



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	FS06		Matrix:	Soil		Date Received:11.2	27.19 09.1	0
Lab Sample Id	: 644605-004		Date Collec	cted: 11.26.19 1	6.15	Sample Depth: 0.5	- 2 ft	
Analytical Me	thod: Chloride by EP	PA 300				Prep Method: E30	0P	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 1	1.11	Basis: Wet	Weight	
Seq Number:	3109010						U	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	15800	501	mg/kg	11.27.19 14.25		50
Analytical Me Tech: Analyst: Seq Number:	thod: TPH by SW80. DTH DTH 3109024	15 Mod	Date Prep:	11.27.19 1	1.00	Prep Method: SW % Moisture: Basis: Wet	8015P Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range H	Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.27.19 14.05	U	1
Diesel Range Org	ganics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.27.19 14.05	U	1
Motor Oil Range H	ydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.27.19 14.05	U	1
Total GRO-DRO		PHC628	<49.8	49.8	mg/kg	11.27.19 14.05	U	1
Total TPH		PHC635	<49.8	49.8	mg/kg	11.27.19 14.05	U	1
Surrogate			% Cas Number	Recovery U	nits Limit	s Analysis Date	Flag	

122

123

%

%

70-135

70-135

11.27.19 14.05

11.27.19 14.05

111-85-3

84-15-1

Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

Sample Id:	FS06		Matrix:	Soil	Date Received	:11.27.19 09.10
Lab Sample Id	: 644605-004		Date Collected	: 11.26.19 16.15	Sample Depth	:0.5 - 2 ft
Analytical Me	thod: BTEX by EPA 80211	3			Prep Method:	SW5030B
Tech:	MAB				% Moisture:	
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight
Seq Number:	3109032					
Danamatan		Coc Numbor I	Docult DI	T	A	-4- El I

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	11.27.19 19.18	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	11.27.19 19.18	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	11.27.19 19.18	U	1
m,p-Xylenes	179601-23-1	< 0.00395	0.00395		mg/kg	11.27.19 19.18	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	11.27.19 19.18	U	1
Xylenes, Total	1330-20-7	< 0.00198	0.00198		mg/kg	11.27.19 19.18	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	11.27.19 19.18	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	114	%	70-130	11.27.19 19.18		
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.27.19 19.18		



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

Sample Id: FS07		Matrix:	Soil		Date Received:11.2	27.19 09.1	0
Lab Sample Id: 644605-005		Date Collec	cted: 11.26.19 16.20		Sample Depth: 0.5 - 2 ft		
Analytical Method: Chloride by EP	PA 300				Prep Method: E30	0P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	11.27.19 11.11		Basis: Wet	Weight	
Seq Number: 3109010							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9250	502	mg/kg	11.27.19 14.30		50
Analytical Method: TPH by SW80 Tech: DTH Analyst: DTH Seq Number: 3109024	15 Mod	Date Prep:	11.27.19 11.00		Prep Method: SW % Moisture: Basis: Wet	8015P Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.27.19 14.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.27.19 14.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.27.19 14.05	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.27.19 14.05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.27.19 14.05	U	1

	FHC035	<50.0	50.0		mg/kg	11.27.19 14.03	U	
Surrogate	С	% R as Number	ecovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111	-85-3	121	%	70-135	11.27.19 14.05		
o-Terphenyl	84-	15-1	129	%	70-135	11.27.19 14.05		

Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

Sample Id:	FS07	Matrix:	Soil	Date Received	:11.27.19 09.10
Lab Sample Id	: 644605-005	Date Collected	: 11.26.19 16.20	Sample Depth	: 0.5 - 2 ft
Analytical Me	thod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.27.19 10.11	Basis:	Wet Weight
Seq Number:	3109032				
D (

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00197	0.00197		mg/kg	11.27.19 19.38	U	1
Toluene	108-88-3	< 0.00197	0.00197		mg/kg	11.27.19 19.38	U	1
Ethylbenzene	100-41-4	< 0.00197	0.00197		mg/kg	11.27.19 19.38	U	1
m,p-Xylenes	179601-23-1	< 0.00394	0.00394		mg/kg	11.27.19 19.38	U	1
o-Xylene	95-47-6	< 0.00197	0.00197		mg/kg	11.27.19 19.38	U	1
Xylenes, Total	1330-20-7	< 0.00197	0.00197		mg/kg	11.27.19 19.38	U	1
Total BTEX		< 0.00197	0.00197		mg/kg	11.27.19 19.38	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	2	460-00-4	114	%	70-130	11.27.19 19.38		
1,4-Difluorobenzene	1	540-36-3	103	%	70-130	11.27.19 19.38		

1-Chlorooctane

o-Terphenyl



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	FS08		Matrix:	Soil		Ι	Date Received:11.2	7.19 09.1	0
Lab Sample Id:	644605-006		Date Collected: 11.26.19 16.25			S	Sample Depth: 0.5	- 2 ft	
Analytical Meth	od: Chloride by EP	A 300				F	Prep Method: E30	0P	
Tech: N	ЛАB					9	% Moisture:		
Analyst: N	ЛАВ		Date Pren:	11.27.	19 11.11	I	Basis: Wet	Weight	
Seq Number: 3	109010		Duterrep					U	
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	5600	200		mg/kg	11.27.19 14.36		20
Analytical Meth Tech: E Analyst: E Seq Number: 3	od: TPH by SW80 DTH DTH 109024	15 Mod	Date Prep:	11.27.	19 11.00	F 9 F	Prep Method: SW3 % Moisture: Basis: Wet	8015P Weight	
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hy	drocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Diesel Range Organ	nics (DRO)	C10C28DRO	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Motor Oil Range Hydr	rocarbons (MRO)	PHCG2835	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Total GRO-DRO		PHC628	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Total TPH		PHC635	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Surrogate			% Cas Number	6 Recovery	Units	Limits	Analysis Date	Flag	

84-15-1	129	%	70-135	11.27.19 14.25

127

%

70-135

11.27.19 14.25

111-85-3

Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	FS08	Matrix:	Soil	Date Received	:11.27.19 09.10
Lab Sample I	1: 644605-006	Date Collected	11.26.19 16.25	Sample Depth	:0.5 - 2 ft
Analytical Mo Tech: Analyst: Seq Number:	ethod: BTEX by EPA 8021B MAB MAB 3109032	Date Prep:	11.27.19 10.11	Prep Method: % Moisture: Basis:	SW5030B Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	11.27.19 19.57	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	11.27.19 19.57	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	11.27.19 19.57	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	11.27.19 19.57	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	11.27.19 19.57	U	1
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	11.27.19 19.57	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	11.27.19 19.57	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	4	460-00-4	114	%	70-130	11.27.19 19.57		
1,4-Difluorobenzene	5	540-36-3	103	%	70-130	11.27.19 19.57		



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	FS09		Matrix:	Soil		Date Received:11.	27.19 09.10)
Lab Sample Io	1: 644605-007		Date Collec	ted: 11.26.19 16.30		Sample Depth: 0.5	- 2 ft	
Analytical Me	ethod: Chloride by EPA	300				Prep Method: E3	00P	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 13.11		Basis: We	t Weight	
Seq Number:	3109016							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	7540	499	mg/kg	11.27.19 15.09		50
Analytical Me	thod: TPH by SW8015	5 Mod				Prep Method: SW	/8015P	
Tech:	DTH					% Moisture:		
Analyst:	DTH		Date Prep:	11.27.19 11.00		Basis: We	t Weight	
Seq Number:	3109024		-					
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range	Hydrocarbons (GRO)	PHC610	<50.0	50.0	malka	11 27 10 14 25	II	1

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Total GRO-DRO	PHC628	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Total TPH	PHC635	<50.0	50.0		mg/kg	11.27.19 14.25	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	11-85-3	133	%	70-135	11.27.19 14.25		
o-Terphenyl	8	4-15-1	141	%	70-135	11.27.19 14.25	**	

Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

Sample Id:	FS09		Matrix:	Soil	Date Receiv	ed:11.27.19 09.10
Lab Sample I	d: 644605-007		Date Collecte	d: 11.26.19 16.30	Sample Dep	th: 0.5 - 2 ft
Analytical Me	ethod: BTEX by EPA 802	1B			Prep Method	l: SW5030B
Tech:	MAB				% Moisture:	
Analyst:	MAB		Date Prep:	11.27.19 10.11	Basis:	Wet Weight
Seq Number:	3109032					
Parameter		Cas Number	Result D	т	Unita Analysia	Data Flag I

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	11.27.19 20.16	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	11.27.19 20.16	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	11.27.19 20.16	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	11.27.19 20.16	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	11.27.19 20.16	U	1
Xylenes, Total	1330-20-7	< 0.00201	0.00201		mg/kg	11.27.19 20.16	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	11.27.19 20.16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	4	540-36-3	106	%	70-130	11.27.19 20.16		
4-Bromofluorobenzene	2	460-00-4	113	%	70-130	11.27.19 20.16		



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	SW01		Matrix:	Soil		Date Received:11.2	27.19 09.1	0
Lab Sample Io	l: 644605-008		Date Collec	cted: 11.26.19 11.40	Sample Depth: 0.5 - 4 ft			
Analytical Me	thod: Chloride by EP	PA 300				Prep Method: E30	0P	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 13.11		Basis: Wet	Weight	
Seq Number:	3109016							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	1930	99.4	mg/kg	11.27.19 15.26		10
Analytical Me	ethod: TPH by SW80	15 Mod				Prep Method: SW	8015P	
Tech:	DTH					% Moisture:		
Analyst:	DTH		Date Prep:	11.27.19 11.00		Basis: Wet	t Weight	
Seq Number:	3109024							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range	Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.27.19 14.45	U	1
Diesel Range Or	ganics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.27.19 14.45	U	1
Motor Oil Range H	ydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.27.19 14.45	U	1
Total GRO-DRO)	PHC628	<50.2	50.2	mg/kg	11.27.19 14.45	U	1

Total TPH	PHC635	<50.2	50.2		mg/kg	11.27.19 14.45	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	122	%	70-135	11.27.19 14.45		
o-Terphenyl		84-15-1	124	%	70-135	11.27.19 14.45		

Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	SW01	Matrix:	Soil	Date Received	:11.27.19 09.10
Lab Sample Id	: 644605-008	Date Collected	: 11.26.19 11.40	Sample Depth:	: 0.5 - 4 ft
Analytical Met Tech: Analyst: Seq Number:	hod: BTEX by EPA 8021B MAB MAB 3109032	Date Prep:	11.27.19 10.11	Prep Method: % Moisture: Basis:	SW5030B Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	11.27.19 20.35	U	1	
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	11.27.19 20.35	U	1	
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	11.27.19 20.35	U	1	
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	11.27.19 20.35	U	1	
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	11.27.19 20.35	U	1	
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	11.27.19 20.35	U	1	
Total BTEX		< 0.00202	0.00202		mg/kg	11.27.19 20.35	U	1	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	4	540-36-3	105	%	70-130	11.27.19 20.35			
4-Bromofluorobenzene	2	460-00-4	114	%	70-130	11.27.19 20.35			



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	SW02		Matrix:	Soil		Date Received:11.2	27.19 09.1	0
Lab Sample Id	: 644605-009		Date Collec	eted: 11.26.19 11.45		Sample Depth: 0.5	- 4 ft	
Analytical Met	thod: Chloride by EP	A 300				Prep Method: E30	0P	
Tech:	MAB					% Moisture:		
Analyst:	MAB		Date Prep:	11.27.19 13.11		Basis: Wet	Weight	
Seq Number:	3109016		Ĩ					
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	1040	50.4	mg/kg	11.27.19 15.32		5
Analytical Met	thod: TPH by SW801	15 Mod				Prep Method: SW	8015P	
Tech:	DTH					% Moisture:		
Analyst:	DTH		Date Prep:	11.27.19 13.00		Basis: Wet	t Weight	
Seq Number:	3109042		I				Ū	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range H	Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.27.19 15.25	U	1
Diesel Range Org	ganics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.27.19 15.25	U	1
Motor Oil Pange Hy	udroaarbong (MBO)	DUCC2925	<50.0	50.0	ma ca /la ca	11 27 10 15 25	T	1

Dieser Runge Organies (Diro)	eroczobito	\$20.0	20.0		1116/116	11.27.17 15.25	U	-
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0		mg/kg	11.27.19 15.25	U	1
Total GRO-DRO	PHC628	<50.0	50.0		mg/kg	11.27.19 15.25	U	1
Total TPH	PHC635	<50.0	50.0		mg/kg	11.27.19 15.25	U	1
		0	% Recovery					
Surrogate		Cas Number		Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	115	%	70-135	11.27.19 15.25		
o-Terphenyl		84-15-1	123	%	70-135	11.27.19 15.25		

Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	SW02	Matrix:	Soil	Date Received	:11.27.19 09.10
Lab Sample Id: 644605-009		Date Collected	: 11.26.19 11.45	Sample Depth: 0.5 - 4 ft	
Analytical Me Tech: Analyst: Seq Number:	thod: BTEX by EPA 8021B MAB MAB 3109033	Date Prep:	11.27.19 14.11	Prep Method: % Moisture: Basis:	SW5030B Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	11.28.19 00.00	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	11.28.19 00.00	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	11.28.19 00.00	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	11.28.19 00.00	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	11.28.19 00.00	U	1
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	11.28.19 00.00	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	11.28.19 00.00	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	113	%	70-130	11.28.19 00.00		
1,4-Difluorobenzene		540-36-3	104	%	70-130	11.28.19 00.00		

o-Terphenyl



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id: SW03			Matrix: Soil			Ι	Date Received:11.27.19 09.10			
Lab Sample Io	d: 644605-010	Date Collected: 11.26.19 11.50			S	Sample Depth: 0.5 - 4 ft				
Analytical Me	ethod: Chloride by EP	PA 300				F	Prep Method: E30	0P		
Tech:	MAB					9	6 Moisture:			
Analyst: MAB Seq Number: 3109016			Date Prep:	11.27.19 13.11		E	Basis: Wet	Wet Weight		
								U		
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Chloride		16887-00-6	103	10.1		mg/kg	11.27.19 15.43		1	
Analytical Method:TPH by SW8015 ModTech:DTHAnalyst:DTHSeq Number:3109042		Date Prep:	Date Prep: 11.27.19 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	11.27.19 16.04	U	1	
Diesel Range Or	ganics (DRO)	C10C28DRO	<50.1	50.1		mg/kg	11.27.19 16.04	U	1	
Motor Oil Range H	lydrocarbons (MRO)	PHCG2835	<50.1	50.1		mg/kg	11.27.19 16.04	U	1	
Total GRO-DRC)	PHC628	<50.1	50.1		mg/kg	11.27.19 16.04	U	1	
Total TPH		PHC635	<50.1	50.1		mg/kg	11.27.19 16.04	U	1	
C			%	Recovery	Linita	T :	Analysia D-4-	Flog		
Surrogate		1		124		70 125		riag		

127

%

70-135

11.27.19 16.04

84-15-1
Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	SW03	Matrix:	Soil	Date Received:11.27.19 09.10			
Lab Sample Id	:: 644605-010	Date Collected	11.26.19 11.50	Sample Depth: 0.5 - 4 ft			
Analytical Me Tech: Analyst: Seq Number:	thod: BTEX by EPA 8021B MAB MAB 3109033	Date Prep:	11.27.19 14.11	Prep Method: % Moisture: Basis:	SW5030B Wet Weight		

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	11.27.19 23.40	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	11.27.19 23.40	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	11.27.19 23.40	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	11.27.19 23.40	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	11.27.19 23.40	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	11.27.19 23.40	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	11.27.19 23.40	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	5	540-36-3	97	%	70-130	11.27.19 23.40		
4-Bromofluorobenzene	4	60-00-4	105	%	70-130	11.27.19 23.40		

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o-Terphenyl



Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	SW04		Matrix:	Soil		Γ	Date Received:11.2	7.19 09.1	0
Lab Sample Io	l: 644605-011		Date Collec	cted: 11.26.	19 12.00	S	ample Depth: 0.5	- 4 ft	
Analytical Me	ethod: Chloride by EP	PA 300				F	Prep Method: E30	0P	
Tech:	MAB					9	6 Moisture:		
Analyst:	MAB		Date Prep:	11.27.	.19 13.11	E	Basis: Wet	Weight	
Seq Number:	3109016							U	
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	1080	100		mg/kg	11.27.19 15.49		10
Analytical Me Tech: Analyst: Seq Number:	ethod: TPH by SW80 DTH DTH 3109042	15 Mod	Date Prep:	11.27.	19 13.00	F 9 E	Prep Method: SW8 6 Moisture: Basis: Wet	8015P Weight	
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range	Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	11.27.19 16.04	U	1
Diesel Range Or	ganics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	11.27.19 16.04	U	1
Motor Oil Range H	lydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	11.27.19 16.04	U	1
Total GRO-DRC)	PHC628	<49.9	49.9		mg/kg	11.27.19 16.04	U	1
Total TPH		PHC635	<49.9	49.9		mg/kg	11.27.19 16.04	U	1
Surrogate			% Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooc	ctane	11	1-85-3	117	%	70-135	11.27.19 16.04		

126

%

70-135

11.27.19 16.04

84-15-1

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Certificate of Analytical Results 644605

LT Environmental, Inc., Arvada, CO

RDX Federal 17-35H

Sample Id:	SW04	Matrix:	Soil	Date Received	:11.27.19 09.10	
Lab Sample Id	: 644605-011	Date Collected	: 11.26.19 12.00	Sample Depth: 0.5 - 4 ft		
Analytical Me Tech:	thod: BTEX by EPA 8021B MAB			Prep Method: % Moisture:	SW5030B	
Analyst:	MAB	Date Prep:	11.27.19 14.11	Basis:	Wet Weight	
Seq Number:	3109033					
_						

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	11.28.19 00.19	U	1	-
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	11.28.19 00.19	U	1	
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	11.28.19 00.19	U	1	
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	11.28.19 00.19	U	1	
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	11.28.19 00.19	U	1	
Xylenes, Total	1330-20-7	< 0.00201	0.00201		mg/kg	11.28.19 00.19	U	1	
Total BTEX		< 0.00201	0.00201		mg/kg	11.28.19 00.19	U	1	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene		540-36-3	104	%	70-130	11.28.19 00.19			
4-Bromofluorobenzene		460-00-4	115	%	70-130	11.28.19 00.19			



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 Clie	nt Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labora	atory 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.

RDX Federal 17-35H

Analytical Method:	Chloride by EPA 30	0						P	rep Meth	od: E30	00P	
Seq Number:	3109010]	Matrix:	Solid				Date Pr	ep: 11.2	27.19	
MB Sample Id:	7691326-1-BLK		LCS San	ple Id:	7691326-1	-BKS		LCS	D Sample	e Id: 769	1326-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag

Analytical Method:	Chloride by EPA 30)						Pı	ep Metho	od: E30	OP	
Seq Number:	3109016		Ν	Matrix:	Solid				Date Pre	ep: 11.2	27.19	
MB Sample Id:	7691384-1-BLK		LCS Sam	ple Id:	7691384-1	-BKS		LCS	D Sample	d: 769	1384-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	9.72	250	260	104	264	106	90-110	2	20	mg/kg	11.27.19 14:58	

Analytical Method:	Chloride by EPA 30	0						Р	rep Meth	od: E30	0P	
Seq Number:	3109010]	Matrix:	Soil				Date Pr	ep: 11.2	27.19	
Parent Sample Id:	644603-001		MS San	nple Id:	644603-00	01 S		MS	D Sample	e Id: 644	603-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lin	nit Units	Analysis Date	Flag
Chloride	186	199	365	90	363	89	90-110	1	20	mg/kg	11.27.19 12:16	Х

Analytical Method:	Chloride by	EPA 30	0						Pi	rep Meth	od: E30	0P	
Seq Number:	3109010			l	Matrix:	Soil				Date Pr	ep: 11.2	27.19	
Parent Sample Id:	644603-011			MS San	ple Id:	644603-01	1 S		MS	D Sample	e Id: 644	603-011 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride		50.6	202	237	92	234	92	90-110	1	20	mg/kg	11.27.19 13:35	

Analytical Method:	Chloride by EPA 3	00						P	rep Meth	od: E30)0P	
Seq Number:	3109016]	Matrix:	Soil				Date Pr	rep: 11.2	27.19	
Parent Sample Id:	644605-007		MS San	nple Id:	644605-00	07 S		MS	D Sampl	e Id: 644	605-007 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lin	nit Units	Analysis Date	Flag
Chloride	7540	200	7700	80	7690	76	90-110	0	20	mg/kg	11.27.19 15:15	Х

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.

RDX Federal 17-35H

Analytical Method:	Chloride by EPA 30)0						Pı	rep Metho	od: E30	0P	
Seq Number:	3109016			Matrix:	Soil				Date Pre	ep: 11.2	7.19	
Parent Sample Id:	644608-006		MS San	nple Id:	644608-00)6 S		MS	D Sample	e Id: 644	508-006 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	2830	200	3040	105	3030	101	90-110	0	20	mg/kg	11.27.19 16:41	

Analytical Method:	TPH by SW	78015 Mo	od						Р	rep Method	l: SW	/8015P	
Seq Number:	3109024			I	Matrix:	Solid				Date Prep	o: 11.	27.19	
MB Sample Id:	7691369-1-1	BLK		LCS San	ple Id:	7691369-1	I-BKS		LCS	D Sample 1	ld: 769	91369-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	< 50.0	1000	1050	105	905	91	70-135	15	35	mg/kg	11.27.19 10:43	
Diesel Range Organics (DRO)	< 50.0	1000	1200	120	1110	111	70-135	8	35	mg/kg	11.27.19 10:43	
Surrogate		MB %Rec	MB Flag	L0 %]	CS Rec	LCS Flag	LCSI %Re	D LCS c Flag	D L g	imits	Units	Analysis Date	
1-Chlorooctane		105		13	33		127		7	0-135	%	11.27.19 10:43	
o-Terphenyl		112		13	34		130		7	0-135	%	11.27.19 10:43	

Analytical Method:	TPH by S	W8015 M	od						Р	rep Method	I: SW	8015P	
Seq Number:	3109042				Matrix:	Solid				Date Prep	o: 11.2	27.19	
MB Sample Id:	7691370-1	-BLK		LCS San	nple Id:	7691370-	1-BKS		LCS	D Sample l	ld: 769	1370-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	<50.0	1000	897	90	1120	112	70-135	22	35	mg/kg	11.27.19 15:05	
Diesel Range Organics (DRO)	<50.0	1000	1110	111	1290	129	70-135	15	35	mg/kg	11.27.19 15:05	
Surrogate		MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSI %Re) LCS c Flag	D L g	limits	Units	Analysis Date	
1-Chlorooctane		113		1	22		134		7	0-135	%	11.27.19 15:05	
o-Terphenyl		114		1	29		126		7	0-135	%	11.27.19 15:05	

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8	015P	
Seq Number:	3109024	Matrix:	Solid	Date Prep:	11.27	7.19	
		MB Sample Id:	7691369-1-BLK				
Parameter		MB Result		τ	J nits	Analysis Date	Flag
Motor Oil Range Hydrocart	oons (MRO)	<50.0		m	ng/kg	11.27.19 10:24	

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



QC Summary 644605

Flag

Analysis

Date

11.27.19 15:05

LT Environmental, Inc.

RDX Federal 17-35H

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW80)15P
Seq Number:	3109042	Matrix:	Solid	Date Prep:	11.27	.19
		MB Sample Id:	7691370-1-BLK			
Parameter		MB Result		Ŭ	Inits	Aı
Motor Oil Range Hydrocarb	ons (MRO)	<50.0		m	g/kg	11.27

Analytical Method:	TPH by SW	/8015 M	od						Р	rep Method	l: SW	/8015P	
Seq Number:	3109024]	Matrix:	Soil				Date Prep	o: 11.	27.19	
Parent Sample Id:	644603-001			MS San	nple Id:	644603-00	01 S		MS	D Sample I	d: 644	603-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	<49.9	998	905	91	1000	100	70-135	10	35	mg/kg	11.27.19 11:03	
Diesel Range Organics (DRO)	<49.9	998	1110	111	1150	115	70-135	4	35	mg/kg	11.27.19 11:03	
Surrogate				N %]	IS Rec	MS Flag	MSD %Re) MSE c Flag) L g	imits	Units	Analysis Date	
1-Chlorooctane				1	19		132		7	0-135	%	11.27.19 11:03	
o-Terphenyl				1	27		131		7	0-135	%	11.27.19 11:03	

Analytical Method: Seq Number: Parent Sample Id:	TPH by SW 3109042 644605-009	8015 Ma	od	l MS Sam	Matrix: ple Id:	Soil 644605-00)9 S		P MS	rep Method Date Prep D Sample I	l: SW o: 11.2 d: 644	8015P 27.19 605-009 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	<50.2	1000	1050	105	895	90	70-135	16	35	mg/kg	11.27.19 15:45	
Diesel Range Organics (DRO)	< 50.2	1000	1080	108	1280	128	70-135	17	35	mg/kg	11.27.19 15:45	
Surrogate				M %I	IS Rec	MS Flag	MSD %Ree	MSD c Flag) L	imits	Units	Analysis Date	
1-Chlorooctane				8	4		104		7	0-135	%	11.27.19 15:45	
o-Terphenyl				9	0		124		7	0-135	%	11.27.19 15:45	

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.

RDX Federal 17-35H

Analytical Method:	BTEX by EPA 8021	B]	Prep Meth	od: SW3	5030B	
Seq Number:	3109032]	Matrix:	Solid				Date Pr	rep: 11.2	7.19	
MB Sample Id:	7691377-1-BLK		LCS San	nple Id:	7691377-1	-BKS		LC	SD Sample	e Id: 769	1377-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI) RPD Lin	nit Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.0900	90	0.0916	92	70-130	2	35	mg/kg	11.27.19 11:09	
Toluene	< 0.00200	0.100	0.0920	92	0.0930	93	70-130	1	35	mg/kg	11.27.19 11:09	
Ethylbenzene	< 0.00200	0.100	0.0906	91	0.0918	92	71-129	1	35	mg/kg	11.27.19 11:09	
m,p-Xylenes	< 0.00400	0.200	0.194	97	0.197	99	70-135	2	35	mg/kg	11.27.19 11:09	
o-Xylene	< 0.00200	0.100	0.0987	99	0.100	100	71-133	1	35	mg/kg	11.27.19 11:09	
Surrogate	MB %Rec	MB Flag	L(%)	CS Rec	LCS Flag	LCSI %Re	D LCS c Flag	D I g	Limits	Units	Analysis Date	
1,4-Difluorobenzene	100		1	00		102		7	70-130	%	11.27.19 11:09	
4-Bromofluorobenzene	101		1	08		111		-	70-130	%	11.27.19 11:09	

Analytical Method: Seq Number:	BTEX by EPA 8021 3109033	В		Matrix:	Solid			I	Prep Metho Date Pro	od: SW:	5030B 27.19	
MB Sample Id: Parameter	/6913/8-1-BLK MB Result	Spike Amount	LCS San LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPE	RPD Lim	it Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.0782	78	0.0900	90	70-130	14	35	mg/kg	11.27.19 21:58	
Toluene	< 0.00200	0.100	0.0801	80	0.0920	92	70-130	14	35	mg/kg	11.27.19 21:58	
Ethylbenzene	< 0.00200	0.100	0.0784	78	0.0902	90	71-129	14	35	mg/kg	11.27.19 21:58	
m,p-Xylenes	< 0.00400	0.200	0.168	84	0.193	97	70-135	14	35	mg/kg	11.27.19 21:58	
o-Xylene	< 0.00200	0.100	0.0869	87	0.0999	100	71-133	14	35	mg/kg	11.27.19 21:58	
Surrogate	MB %Rec	MB Flag	L0 %]	CS Rec	LCS Flag	LCSI %Re	D LCS c Flag	D I g	Limits	Units	Analysis Date	
1,4-Difluorobenzene	99		9	8		101		7	0-130	%	11.27.19 21:58	
4-Bromofluorobenzene	104		10	07		109		7	0-130	%	11.27.19 21:58	

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 8021 3109032 644603-001	В	N MS Sam	/latrix: ple Id:	Soil 644603-00	01 S		F MS	Prep Metho Date Pro SD Sample	od: SW: ep: 11.2 e Id: 644	5030B 27.19 603-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Benzene	< 0.00202	0.101	0.0925	92	0.102	101	70-130	10	35	mg/kg	11.27.19 11:47	
Toluene	< 0.00202	0.101	0.0934	92	0.103	102	70-130	10	35	mg/kg	11.27.19 11:47	
Ethylbenzene	< 0.00202	0.101	0.0918	91	0.101	100	71-129	10	35	mg/kg	11.27.19 11:47	
m,p-Xylenes	< 0.00403	0.202	0.197	98	0.215	106	70-135	9	35	mg/kg	11.27.19 11:47	
o-Xylene	< 0.00202	0.101	0.101	100	0.110	109	71-133	9	35	mg/kg	11.27.19 11:47	
Surrogate			М %Б	S Rec	MS Flag	MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1,4-Difluorobenzene			10	0		105		7	0-130	%	11.27.19 11:47	
4-Bromofluorobenzene			10	19		113		7	0-130	%	11.27.19 11:47	

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

Final 1.000



LT Environmental, Inc.

RDX Federal 17-35H

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 8021 3109033 644605-010	В	MS Sam	Matrix: ple Id:	Soil 644605-01	0 S		F MS	Prep Metho Date Pre SD Sample	d: SW: p: 11.2 Id: 644	5030B 27.19 605-010 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Benzene	< 0.00200	0.0998	0.0836	84	0.0880	88	70-130	5	35	mg/kg	11.27.19 22:36	
Toluene	< 0.00200	0.0998	0.0832	83	0.0856	86	70-130	3	35	mg/kg	11.27.19 22:36	
Ethylbenzene	< 0.00200	0.0998	0.0810	81	0.0823	82	71-129	2	35	mg/kg	11.27.19 22:36	
m,p-Xylenes	< 0.00399	0.200	0.173	87	0.175	87	70-135	1	35	mg/kg	11.27.19 22:36	
o-Xylene	< 0.00200	0.0998	0.0898	90	0.0915	92	71-133	2	35	mg/kg	11.27.19 22:36	
Surrogate			M %1	IS Rec	MS Flag	MSD %Re	o MSI c Flag) I g	Limits	Units	Analysis Date	
1,4-Difluorobenzene			10	04		104		7	0-130	%	11.27.19 22:36	
4-Bromofluorobenzene			11	15		114		7	0-130	%	11.27.19 22:36	

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

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	Une Eyen	Relinquished by: (Signature)	Notice: Signature of this document and relinqu of service. Xenco will be liable only for the cos of Xenco. A minimum charge of \$75.00 will be	Total 200.7 / 6010 200.8 / Circle Method(s) and Metal(s	Swo3	SW02	Swo 1	FSO9	FSO8	4034	FS 010	FSOS	FSOU	F503	Lab Sample Identification	Sample Custody Seals: Yes	Cooler Custody Seals: Yes (Received Intact: (Ye	Temperature (°C):	SAMPLE RECEIPT	PO# 229-51	Sampler's Name:	Project Location Rural E	Project Number: 034810	Project Name: RDX Fed	Phone: 970-28	City, State ZIP: Rifle, 0	Address: 820 Me	Company Name: LT Envi	Project Manager: Chris /	LABORAT
	erc	Received by: (lishment of samples constitutes a vali st of samples and shall not assume ar applied to each project and a charge	6020: 8) to be analyzed TCL	S V 115	S III4	U III	S III	3	S II	5	5	S I III	S 11/26/19 112	Matrix Date Sampled Sa	Ne N/A Total Col	NA Correction	NO T-J	2. U (Ther	Temp Blank: (Yes No	by Quote #:	syers a	ddy Country	loyle	deral 17-35H	5-9985	0 81650	igen Ave, Unit B	ironmental	Mckisson	DRIES Midland, Phoenix,AZ
	UUL 11/20	Signature)	d purchase order from client company y responsibility for any losses or exp of \$5 for each sample submitted to Xe	RCRA 13PPM Texas 11 P / SPLP 6010: 8RCRA SI	0 0.5-4-1	1 , 1-5.0 5	0 0.5-41 1	30 0.5-21 1	15 0.5-21 1	10 0.5-21 1	15 0.5-21 1	35 u' 1	1 14 03	5 4 1	Impled Depth Numb	er of	1 Factor: -0-2 co	FOG MUL	mometer ID	Wet Ice: Ves No		Due Date:	Rush: 24 57	Routine Code	Turn Around	Email: cmckisson	City, State ZIP:	Address	Company Name	Bill to: (if different	Houston,TX (281) 240-4200 E TX (432) 704-5440 EL Paso,TX (91 (480) 355-0900 Atlanta,GA (770) 4
σ	P/19 01:10 2	Date/Time Relinquished by: (Signat	y to Xenco, its affiliates and subcontractors. It assigns standard enses incurred by the client if such losses are due to circumstan nco, but not analyzed. These terms will be enforced unless previ-	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pt b As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se						V					TPH BTE Chi	(E ix(de	PA L (80	5)15 307 74	203	0.0	2)		ANALYSIS R	@Henvicon Eabyers@Henvicom			: LT Environmental	O Chris McKisson	Jallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 15) 585-3443 Lubbock,TX (806) 794-1296 Crasibad, NM (43) 49-3800 Tampa,FL (813) 620-2000 West Palm Beach, FL (
		ure) Received by: (Signature)	terms and conditions es beyond the control usly negotiated.	Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Ag Ti U 1631/2												2	TAT	Zn A	NaO	HCL	H2S	HNO	Non	Mec	QUEST	Deliverables: EDD ADaPT	Reporting:Level II Level III PST/US	State of Project:	Program: UST/PST PRP Brownfiel	Work Order Com) 704-5440 61) 69-6701 <u>www.xenco.com</u>
		Date/Time		I Sn U V Zn 245.1/7470 /7471:Hg											Sample Comments	received by 4:00pm		Acetate+ NaOH: Zn	DH: Na		304: H2	O3: HN	NO .et	OH: Me	Preservative Codes	Other:			Ids RRC Superfund	Iments	Page 1 of 2

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Chain of Custody

Work Order No: UHU 605

		indition on oncomy	WOIN OLACI INC.	
LABORATORIES Midland TY (432) 70	on,TX (281) 240-4200 [llas,TX (214) 902-0300 San Antonio,TX (210) 509-3334) 585-3443 Lubbock TX (806) 794-1296 Craslbad, NM (432) 7	04-5440	
Phoenix,AZ (480) 355-0	900 Atlanta,GA (770) 4	3-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 <u>www.xenco.com</u>	Page 2 of 2
Project Manager: Chris Mckisson	Bill to: (if differen	Chris McKisson	Work Order Con	nments
company Name: LT Environmental	Company Name	LT Environmental	Program: UST/PST PRP Brownfie	elds RRC Superfund
Address: 820 Megan Arc, Unit B	Address		State of Project:	
city. State ZIP: Rifle, CS 81050	City, State ZIP		Reporting:Level II Level III PST/U	
Phone: 970-285-9985 Email:	cmckisson(Henricom d-abyers@Henricom	Deliverables: EDD ADaPT	Other:
Project Name: RDX Federal 17-35H Tu	Irn Around	ANALYSIS REC	QUEST	Preservative Codes
Project Number: 034819046 Routin	1e Code		Me	eOH: Me
Project Location Rural Eddy County Rush:	2448	0)	NC	one: NO
Sampler's Name: Anna Byen Due D	ate:		H	NO3: HN
PO #: 227-5649 Quote #:		8	H	2S04: H2
AMPLE RECEIPT Temp Blank: Yes No , Wet Ice:	Yes NO is	80 80 80 80	н	CL: HL
Temperature (°C):	tainer	A PA - (E	Zn	aOH: Na 1 Acetate+ NaOH: Zn
Cooler Custody Seals: Yes No N/A Correction Factor:	Cor	EP (E de	TA	AT starts the day recevied by the lab, if
Sample Custody Seals: Ares No N/A Total Containers:	er of	(:x ovi		received by 4:00pm
Sample Identification Matrix Sampled Sampled	Depth	TPH BTE CNU		Sample Comments
SW04 S 11/20/19 1200	0.5-4/ 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

Lab

K

Received by OCD: 12/5/2019 4:05:02 PM

Unn-

anon

Relinquished by: (Signature)

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.

Received by: (Signature)

-

9.10

are/ Ime In

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

24

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

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

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

Revised Date 022619 Rev

2019.

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4



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 11/27/2019 09:10:00 AM Temperature Measuring device used : T-NM-007 Work Order #: 644605 Sample Receipt Checklist Comments

#1 *Temperature of cooler(s)?	.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: 11/27/2019

Checklist reviewed by: Jessica Kramer

Date: 11/27/2019

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