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	NRM2017643736
District RP	
Facility ID	
Application ID	

# **Release Notification**

# **Responsible Party**

Responsible Party: WPX Energy Permian, LLC.				OGRID: 246289					
Contact Name: Lynda Laumbach					Contact Telephone: (575) 725-1647				
Contact ema	il: Lynda.La	umbach@wpxene	ergy.com		Incident #	(assigned by OCD) NRM2017643736			
Contact mail	ing address:	5315 Buena Vist	a Drive, Carlsba	d, NM 88	3220				
			Locatio	n of R	elease S	ource			
Latitude 3	2.049734		(NAD 83 in	decimal deş	Longitude grees to 5 decir	-103.9102662 mal places)			
Site Name: R	DX 17 Fede	ral #36H			Site Type:	Production Facility			
Date Release	Discovered:	06/16/2020			API# (if app	plicable): 30-015-43636			
Unit Letter	Section	Township	Range		Cour	ntv			
D	17	26S	30E	Eddy	Eddy				
☐ Crude Oil		l(s) Released (Select a				Release  justification for the volumes provided below)  Volume Recovered (bbls):			
			. ,			` '			
X Produced	Water	Volume Release				Volume Recovered (bbls): 22			
		Is the concentra produced water	tion of dissolved >10.000 mg/l?	d chloride	in the	Yes No			
Condensa	ite	Volume Release				Volume Recovered (bbls)			
Natural Gas Volume Released (Mcf)					Volume Recovered (Mcf)				
Other (describe) Volume/Weight Released (provide unit			ide units)	Volume/Weight Recovered (provide units)					
			ng 22bbl of proc	duced wat	ter to be rele	eased into the lined secondary containment. All fluids			

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Incident ID	NRM2017643736
District RP	
Facility ID	
Application ID	

Was this a major release as defined by	If YES, for what reason(s) does the respo	nsible party consider this a major release?
19.15.29.7(A) NMAC?		
Yes X No		
ICATE C 11 1		0. W/
If YES, was immediate no	otice given to the OCD? By whom? To whom	nom? When and by what means (phone, email, etc)?
	Initial R	esponse
The responsible	party must undertake the following actions immediate	ly unless they could create a safety hazard that would result in injury
X The source of the rele	ease has been stopped.	
The impacted area ha	s been secured to protect human health and	the environment.
X Released materials ha	ave been contained via the use of berms or	dikes, absorbent pads, or other containment devices.
X All free liquids and re	ecoverable materials have been removed an	d managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain	why:
has begun, please attach	a narrative of actions to date. If remedial	emediation immediately after discovery of a release. If remediation efforts have been successfully completed or if the release occurred blease attach all information needed for closure evaluation.
regulations all operators are public health or the environr failed to adequately investig	required to report and/or file certain release not ment. The acceptance of a C-141 report by the C ate and remediate contamination that pose a thro	best of my knowledge and understand that pursuant to OCD rules and fications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have eat to groundwater, surface water, human health or the environment. In responsibility for compliance with any other federal, state, or local laws
Printed Name: Lyn		Title: Environmental Specialist
Signature:	Jamback	Date: _06/25/2020
email: Lynda.Laumbac	h@wpxenergy.com	Telephone: (575)725-1647
OCD Only		
Received by: Ramona	n Marcus	Date: 6/26/2020

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Incident ID	NRM2017643736	
District RP		
Facility ID		
Application ID		

# Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☑ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☑ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☑ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☑ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☑ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☑ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☑ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☑ No
Did the release impact areas <b>not</b> 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 ver contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.	tical extents of soil
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 well Field data	ls.
Data table of soil contaminant concentration data	
Depth to water determination  Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release	
Boring or excavation logs	
✓ Photographs including date and GIS information	
☐ Topographic/Aerial maps ☐ Laboratory data including chain of custody	
Land Classer J. Sanda Intermental Streeth of Septions	

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.

Received by OCD: 3/27/2023 11:36:10 AM Form C-141 State of New Mexico
Page 4 Oil Conservation Division

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ncident ID	NRM2017643736	
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Facility ID		

Application ID

Mate of New Mexico

Incident ID	NRM2017643736
District RP	
Facility ID	
Application ID	

# **Remediation Plan**

Remediation Plan Checklist: Each of the following items must be	e included in the plan.
<ul> <li>✓ Detailed description of proposed remediation technique</li> <li>✓ Scaled sitemap with GPS coordinates showing delineation point</li> <li>✓ Estimated volume of material to be remediated</li> <li>✓ Closure criteria is to Table 1 specifications subject to 19.15.29.</li> <li>✓ Proposed schedule for remediation (note if remediation plan times)</li> </ul>	12(C)(4) NMAC
Deferral Requests Only: Each of the following items must be con	nfirmed as part of any request for deferral of remediation.
Contamination must be in areas immediately under or around predeconstruction.	roduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human health	n, the environment, or groundwater.
	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name: Lynda Laumbach	Title: Environmental Specialist
Signature: fpsls tombach	Date: 06/01/2021
email: lynda.laumbach@wpxenergy.com	Telephone: 575-725-1647
OCD Only	
Received by:	Date:
Approved	Approval
Signature:	Date:

<u>District I</u> 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

# NM OIL CONSERVATION

ARTESIA DISTRICT **Energy Minerals and Natural Resources** 

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

State of New Mexico

MAY 0.5 2017 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

RECEIVED

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	7129	52339	<del>}</del>			<b>OPERA</b>		$oxed{f \Sigma}$	Initi	al Report		Final Report
Name of Co		WPX Energ		I 24628		Contact	Karolina Blan		<u> </u>			
Address Facility Nar		ena Vista D	r				No. 970 589 074 e: Well Pad	13		<u></u>		
							c. Well I ad					
Surface Ow	ner: Feder	ral		Mineral C	wner: I	Federal			API No	0. 30- 015-4	1664	<u> </u>
				LOCA	TION	OF REI	LEASE					
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/Wes	County			
D	17	26S	30E	150		FNL	682	FW	L	Eddy		
			La	titude: 32.0492 <b>NAT</b>		Longitud OF REL		77W				
Type of Rele		ed Water				<del></del>	Release: 11 Bbls			e Recovered		
Source of Re Flowline	lease					5/2/2017	lour of Occurrenc	ce l		nd Hour of I 17 – 11:00 h		
Was Immedia	ate Notice (		Yes [	No Not Re	equired	If YES, To NMOCD (	Whom? Crystal Weaver &	Michael B	Bratcher,	BLM Shelly	y Tuc	ker
By Whom? K	arolina Bla					Date and H	lour: 5/3/17- 12:4	42 hrs MT				
Was a Water		ched?					olume Impacting t	the Waterc	ourse.			
		L.	Yes 🗵	] No		N/A						
If a Watercou	irse was Im	pacted, Descr	ibe Fully.	* N/A								
Describe Cau	se of Probl	em and Reme	dial Actio	n Taken.*								
				ne corroded and and approximate								
Describe Are	a Affected	and Cleanup	Action Tal	ken.*		<u> </u>	<del> </del>					
OCD Guideli	nes for Rer	nediation of I	eaks, Spil	and will be scrape	Further r	emediation v	vill be based on th	nese results	3.			
regulations a public health should their or or the enviro	Il operators or the envi operations h nment. In a	are required to ronment. The nave failed to	to report at acceptana adequately OCD accep	e is true and comp nd/or file certain r ce of a C-141 repo y investigate and r otance of a C-141	release ne ort by the remediate	otifications a e NMOCD m e contaminat	nd perform correct parked as "Final Ricon that pose a thr	ctive actior Report" doe reat to grou	ns for rel s not rel and wate	eases which ieve the ope r, surface wa	may rator o ater, h	endanger of liability numan health
	V. I	Blaney					OIL CON	SERVA	TION	DIVISIO	<u>NC</u>	
Signature:		Draney							ر. م م	1 ( )	À	10
Printed Name	e: Karolina	Blaney				Approved by	Environmental S	specialis:	ME	stel/		W.
Title: Enviro	onmental Sp	pecialist				Approval Da	te: 5/8   17	Ex	piration	Date: N/	A_	
		na.blaney@w	pxenergy.	com	İ	Conditions o	•		1	Attached	~	
Date: 5/4/20				: 970-589-0743		_	atta	che	d	Attached	) <u>) (2.3</u>	
Attach Addi		ets If Necess		. 710 307-0143		<u>-</u>				2RP-	41	98

	Page 7 of 18	89
Incident ID	NAB1712952339	
District RP	2RP-4198	
Facility ID		
Application ID		

# **Site Assessment/Characterization**

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 (ft bgs)							
Did this release impact groundwater or surface water?	☐ Yes ☑ No							
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?								
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 <b>not</b> 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.								
<ul> <li>✓ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wel</li> <li>✓ Field data</li> <li>✓ Data table of soil contaminant concentration data</li> <li>✓ Depth to water determination</li> </ul>	ls.							
$\overline{V}$ Determination of water sources and significant watercourses within $\frac{1}{2}$ -mile of the lateral extents of the release								

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.

Boring or excavation logs

✓ Topographic/Aerial maps

✓ Photographs including date and GIS information

✓ Laboratory data including chain of custody

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Incident ID	NAB1712952339
District RP	2RP-4198
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.								
Printed Name: Lynda Laumbach	Title: Environmental Specialist							
Printed Name: Lynda Laumbach Signature:	Date:06/01/2021							
email: lynda.laumbach@wpxenergy.com	Telephone: <u>575-725-1647</u>							
OCD Only								
Received by:	Date:							

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Incident ID	NAB1712952339
District RP	2RP-4198
Facility ID	
Application ID	

# **Remediation Plan**

Remediation Plan Checklist: Each of the following items must be	included in the plan.
<ul> <li>✓ Detailed description of proposed remediation technique</li> <li>✓ Scaled sitemap with GPS coordinates showing delineation points</li> <li>✓ Estimated volume of material to be remediated</li> <li>✓ Closure criteria is to Table 1 specifications subject to 19.15.29.1</li> <li>✓ Proposed schedule for remediation (note if remediation plan times)</li> </ul>	2(C)(4) NMAC
Deferral Requests Only: Each of the following items must be con-	firmed as part of any request for deferral of remediation.
	oduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human health.	the environment, or groundwater.
which may endanger public health or the environment. The acceptar liability should their operations have failed to adequately investigate surface water, human health or the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local later than the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local later than the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local later than the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local later than the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local later than the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local later than the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local later than the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local later than the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local later than the environment.	ertain release notifications and perform corrective actions for releases ace of a C-141 report by the OCD does not relieve the operator of and remediate contamination that pose a threat to groundwater, cceptance of a C-141 report does not relieve the operator of
OCD Only	
Received by:	Date:
Approved	Approval
Signature: Ashley Maxwell	Date: 3/27/2023

Variance approved for sampling every 500 sq feet.



WSP USA

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

June 1, 2021

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

Re: Remediation Work Plan

RDX 17 Federal #36H/RDX 17-25

Incident Number NRM2017643736 and NAB1712952339

**Eddy County, New Mexico** 

### To Whom it May Concern:

WSP USA Inc. (WSP) (formerly LT Environmental, Inc.), on behalf of WPX Energy Permian, LLC. (WPX), presents the following Remediation Work Plan detailing site assessment and sampling activities completed to date and proposing actions to address impacted soil resulting from two releases of produced water at the RDX 17 (Site). The Site is located in Unit D, Section 17, Township 26 South, Range 30 East, in Eddy County, New Mexico (Figure 1). Based on field observations, field screening activities, and laboratory analytical results from soil sampling activities, WPX is submitting this Remediation Work Plan, describing sampling activities that have occurred and proposing additional remediation activities.

#### **RELEASE BACKGROUND**

# Incident Number NRM2017643736

On June 16, 2020, a pinhole developed on a water line causing approximately 22 barrels (bbls) of produced water into a lined secondary containment. The fluids were recovered, and a subsequent visual inspection of liner integrity determined the liner was not in working condition. 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 June 25, 2020 and was subsequently assigned Incident Number NRM2017643736.

# Incident Number NAB1712952339

On May 2, 2017, a corroded flowline resulted in the release of approximately 11 barrels (bbls) of produced water into a lined containment. A breach next to a hammer union allowed approximately 5 bbls to escape the containment, flowing into the pasture, onto an adjacent access road, and pipeline right-of-way. A hydro-vacuum truck was dispatched to the Site to recover free liquids. Approximately 6 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 May 5, 2017 and was subsequently assigned Incident Number NAB1712952339.

### SITE CHARACTERIZATION

WSP 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). Results from the characterization desktop review are presented on Form C-141, Site Assessment/Characterization Form. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based a boring that was drilled by WPX on December 8, 2020, located approximately 0.4 miles east of the Site. Using a truck mounted drill rig equipped with hollow stem auger, the soil boring was advanced to a total depth of 110 feet bgs. No water was observed within the soil boring after at least 72 hours and the boring was plugged and abandoned. The boring log is included as Attachment 1.

#### **CLOSURE CRITERIA**

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

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

Additionally, the top four feet of reclaimed surface in the affected pasture must be comprised of non-waste containing, uncontaminated earthen material exhibiting chloride concentrations below 600 mg/kg, which was applied per NMAC 19.15.29.13.D (1), or natural background chloride concentrations if they exceed 600 mg/kg. A reclamation standard of 100 mg/kg of TPH was also applied to the affected pasture.

#### **DELINEATION SOIL SAMPLING ACTIVITIES**

# Incident Number NAB1712952339

On August 27, 2020, WSP conducted Site assessment and delineation soil sampling activities. Six potholes (PH01 through PH06) were advanced via heavy equipment within the release extent as described on the Form C-141 to confirm the presence or absence of impact to soil at depth.



Delineation soil samples were collected at depths ranging from approximately 1 foot to 6 feet bgs. At least three discrete soil samples, which included the highest field screening result and the terminus, were collected from the potholes based on field screening results for volatile aromatic hydrocarbons and chloride. Soil samples were screened for volatile aromatic hydrocarbons and chloride using a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The lithologic/soil sampling logs for the boreholes are included in Attachment 2. Soil sample locations are depicted on Figure 2. Photographic documentation during assessment and delineation activities is provided in Attachment 3.

## Incident Number NRM2017643736 and NAB1712952339

On October 29, 2020, WSP utilized a Shaw Tool, Ltd Portable Core Drill to install two corehole delineation points (CH01 and CH02) to determine the vertical extent of impact within the documented breached liner area to confirm vertical delineation of any impacts to soil under the containment. The coreholes were advanced to depths ranging from 6 feet to 8.5 feet bgs. Corehole soil samples were field screened, at minimum, every 2-foot interval for volatile aromatic hydrocarbons and chloride utilizing a calibrated PID and Hach® chloride QuanTab® test strips. Soil samples from CH01 and CH02 were collected from the soil interval with the highest field screening result and the terminus of the corehole. Field screening results and observations for each delineation soil sample were recorded on lithologic/soil sampling logs which are included in Attachment 2. The corehole soil sample locations are presented on Figure 2. The breached area within the lined containment was bonded and repaired by WPX in an effort to restore the integrity of the liner.

#### SOIL COLLECTION METHOD AND ANALYTICAL RESULTS

Each soil sample was placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis, and immediately placed on ice. The samples were transported to Xenco Laboratories (Xenco) in Carlsbad, New Mexico, at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures for analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-ORO by EPA Method 8015M/D, and chloride by EPA Method 300.0.

Laboratory analytical results for the potholes indicated that benzene, BTEX, TPH-GRO/TPH-DRO and TPH concentrations were compliant with the Closure Criteria and reclamation criteria in all delineation soil samples. Laboratory analytical results potholes indicated that chloride concentrations exceeded the reclamation criteria in delineation soil samples PH01, PH01A, PH02, PH02A, PH03A and PH06A. Laboratory analytical results for the corehole soil samples CH01 and CH02 indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH and chloride concentrations were compliant with the Closure Criteria. Furthermore, off-pad impacts are delineated vertically and laterally to the east by corehole soil samples CH01 and CH02. The laboratory analytical results are summarized on Table 1 and laboratory analytical reports are included in Attachment 4.



### PROPOSED WORK PLAN

Because PH06 contained chloride concentrations exceeding 600 mg/kg and was positioned outside of the release footprint, WPX proposes to investigate naturally occurring background concentrations for chloride. The background sampling area will continue to be no closer than 50 feet but no farther than 100 feet from the lateral and horizontal extent of the release. Laboratory analytical results of the chloride background concentrations may be used drive remediation and continued delineation efforts if concentrations are consistent within the background buffer or greater than the reclamation chloride concentration limit of 600 mg/kg. Figure 3 represents the background sampling area buffer that WPX will investigate.

If chloride background levels are consistently less than the 600 mg/kg for chloride, WPX will use the reclamation criteria off pad. If the reclamation standard is applied, WPX estimates up to 1,332 cubic yards of impacted soil exists at the Site within the top 4 feet of the subsurface. Due to the nature of the release (produced water containing chloride) and chloride impacts to approximately 4 feet bgs, WSP proposes excavation of the top 4 feet of the subsurface to the maximum extent allowed based on presence of active pipeline infrastructure. WSP will oversee excavation activities to remediate impacted soil as indicated by visual observations, field screening results, and depths consistent with delineation laboratory analytical results. ISoil will be excavated pursuant to NMAC 19.15.29 to ensure extent of the contaminated soils above Table I thresholds has been identified and removed. Excavated soil will then be transferred to (a) a New Mexico approved landfill facility for disposal or (b) an on-site, lined treatment cell. Non-waste containing soil, as defined by "Procedures for Implementation of the Spill Rule" (September 6, 2019), will then be used to backfill the excavation. If the on-site treatment is selected, non-waste containing soils will be treated soils with each confirmation sample testing below the most protective concentrations in Table I of 19.15.29.12 NMAC and representing no more than 100 cubic yards. Samples pulled from the treatment cell will be from the bottom 12" of the soil and evenly spaced in a grid like pattern.

Remediation associated with Incident Number NAB1712952339 will be completed through excavation of all remaining impacted soil within the release footprint and near PH06 containing chloride concentrations above the observed background concentrations or reclamation standard for the top four feet.

Additional lateral delineation is required for the release associated with Incident Number NRM2017643736 to confirm the release did not impact areas north, east, and south outside of the containment. Delineation activities will be performed simultaneously with excavation activities. If laboratory analytical results from additional delineation soil samples are compliant with the Closure Criteria or background concentrations, WPX will proceed with a closure request for Incident Number NRM2017643736.

### **PROPOSED SAMPLING**

WPX is requesting a variance to the 200 square foot confirmation sampling requirement for the areas to be excavated, which would require an estimated 35 floor samples within the release extent, excluding sidewall samples.



Due to the large extent of the impacted area, WPX proposes increasing the confirmation sampling size to collecting a 5-point composite sample to represent each 500 square foot area. An estimated 14 confirmation samples will be collected from the excavation floor following the completion of remediation activities. Figure 4 illustrates the proposed sampling grids overlaying the representative excavation boundary, which assumes the entirety of the release footprint may need to be addressed. Each square in the grid represents a 500 square foot composite sampling area. Figure 4 does not illustrate sidewall sample locations, which will also be collected to represent 500 square feet sampling areas.

#### PROPOSED SCHEDULE

WPX will complete the additional proposed remediation activities and provide a follow-up report detailing all remediation activities and a request for closure or deferral within 90 days of the date of approval of this work plan by NMOCD.

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

Sincerely,

WSP USA Inc.

Joseph Hernandez

Associate Consultant, Geologist

syn S. Holy.

Ashley L. Ager, P.G.

Ashley L. Ager

Managing Director, Geologist

cc: Lynda Laumbach, WPX

Robert Hamlet, NMOCD Victoria Venegas, NMOCD

Jim Amos, Bureau of Land Management

#### Attachments:

Figure 1 Site Location Map

Figure 2 Delineation Soil Sample Locations

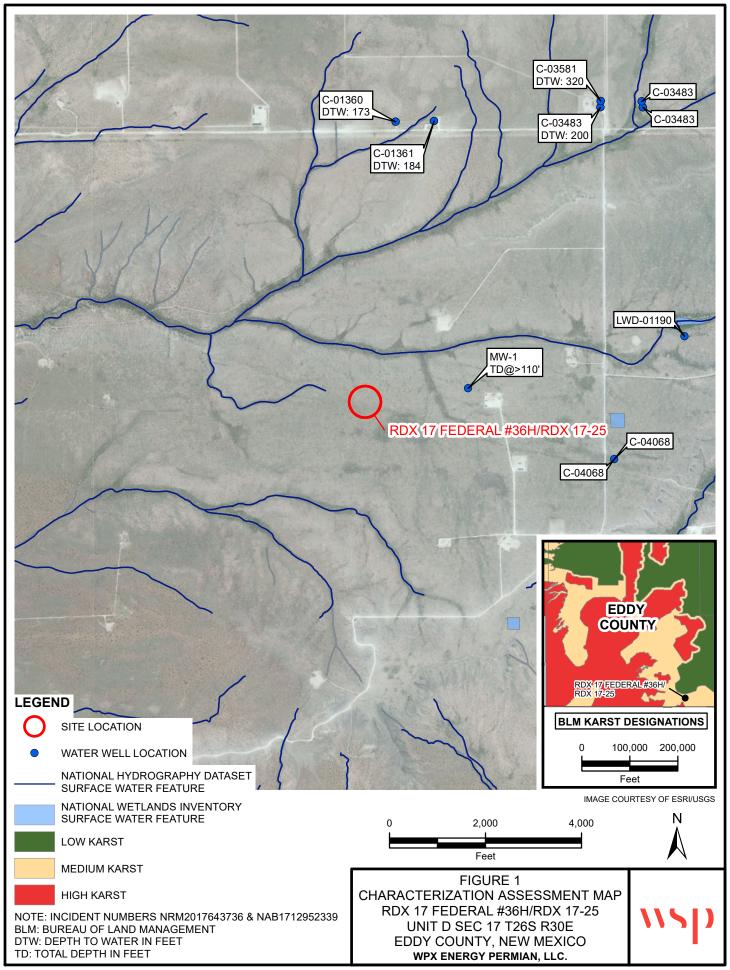
Figure 3 Buffer Sampling Area
Figure 4 Proposed Sampling Area
Table 1 Soil Analytical Results

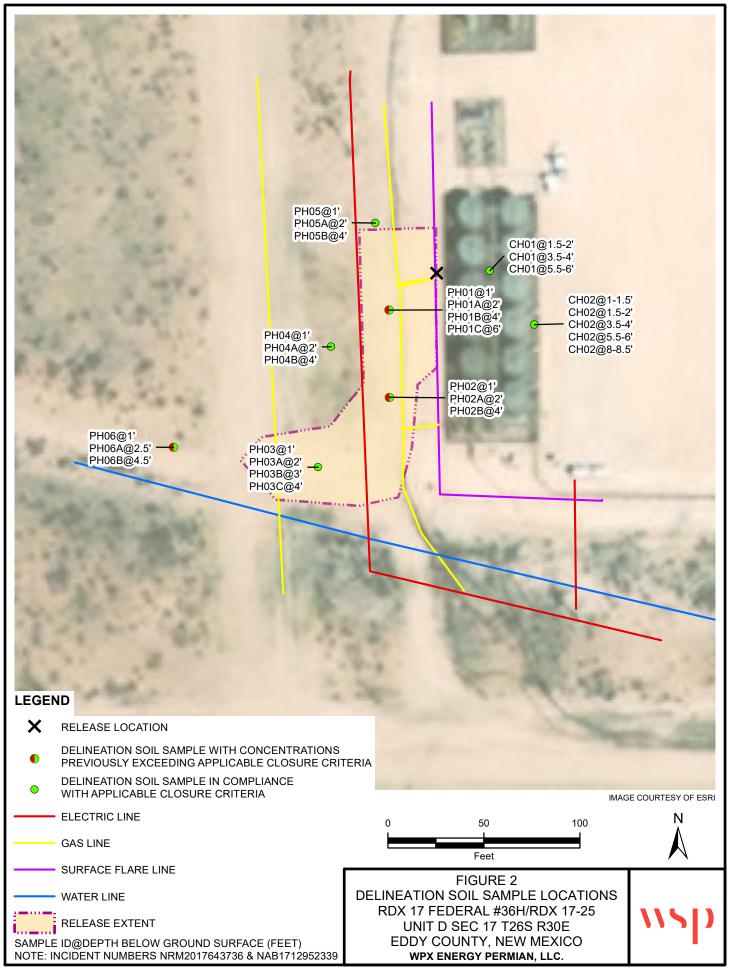
Attachment 1 Boring Log

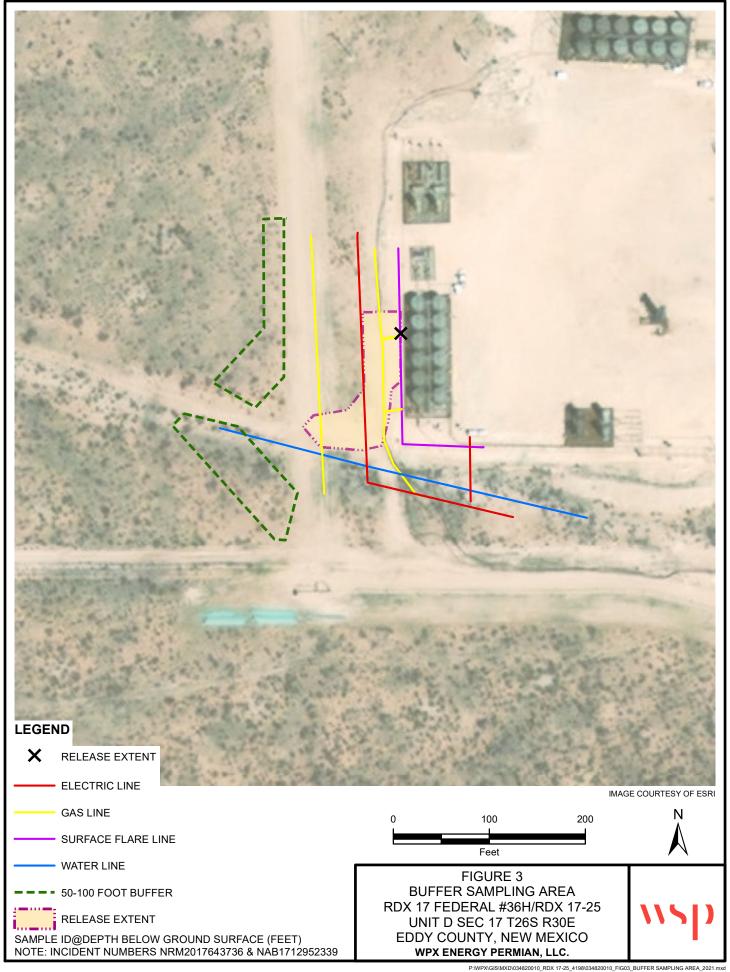
Attachment 2 Lithologic/Sampling Log

Attachment 3 Photographic Log

Attachment 4 Laboratory Analytical Reports







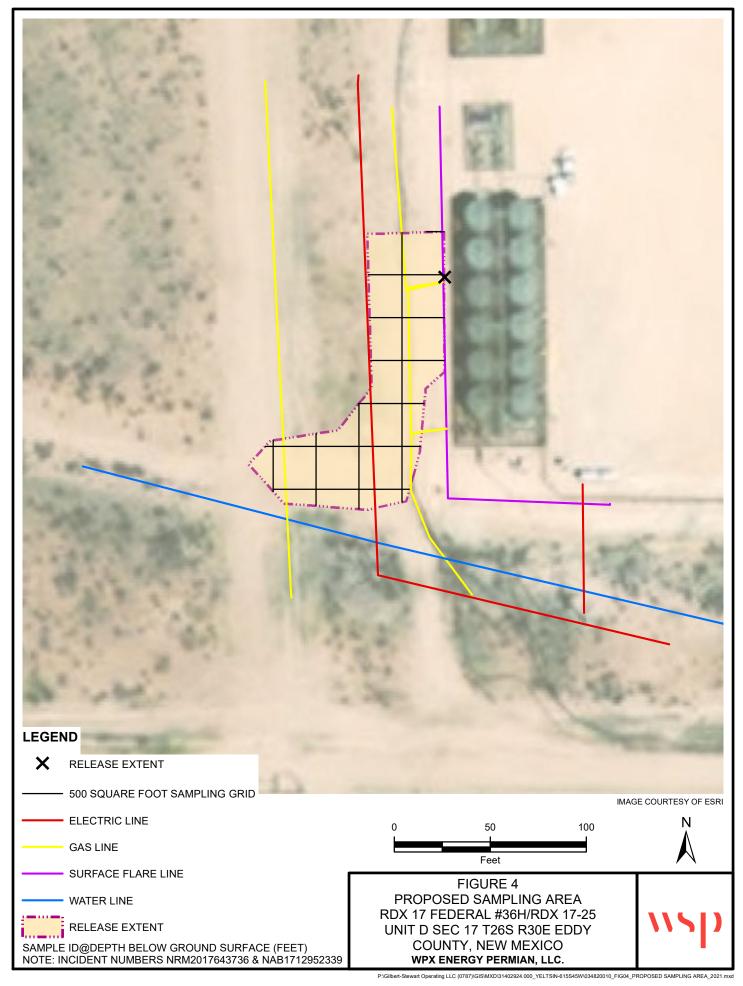


Table 1

#### Soil Analytical Results RDX 17 Federal #36H/RDX 17-25 Incident Number NRM2017643736 and NAB17129523392 Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1	Closure Criteria (	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Samp	les									
PH01	08/27/2020	1	< 0.00198	< 0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	12,300*
PH01A	08/27/2020	2	< 0.00200	< 0.00200	<50.1	<50.1	<50.1	<50.1	< 50.1	3,750*
PH01B	08/27/2020	4	< 0.00200	< 0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	3,720
PH01C	08/27/2020	6	< 0.00198	< 0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	6,480
PH02	08/27/2020	1	< 0.00199	< 0.00199	<49.9	69.5	<49.9	69.5	69.5	2,820*
PH02A	08/27/2020	2	< 0.00199	< 0.00199	<50.1	<50.1	<50.1	<50.1	< 50.1	17,700*
PH02B	08/27/2020	4	< 0.00200	< 0.00200	<50.0	<50.0	<50.0	<50.0	< 50.0	3,180
PH03	08/27/2020	1	< 0.00200	< 0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	1,890*
PH03A	08/27/2020	2	< 0.00202	< 0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	1,180*
РН03В	08/27/2020	3	< 0.00201	< 0.00201	<50.0	<50.0	<50.0	<50.0	< 50.0	512
PH03C	08/27/2020	4	< 0.00198	< 0.00198	<50.1	<50.1	<50.1	<50.1	< 50.1	227
PH04	08/27/2020	1	< 0.00200	< 0.00200	<50.0	<50.0	<50.0	<50.0	< 50.0	55.4
PH04A	08/27/2020	2	< 0.00200	< 0.00200	<50.0	<50.0	<50.0	<50.0	< 50.0	23.1
PH04B	08/27/2020	4	< 0.00198	< 0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	<9.92
PH05	08/27/2020	1	< 0.00198	< 0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	53.5
PH05A	08/27/2020	2	< 0.00200	< 0.00200	<50.1	<50.1	<50.1	<50.1	< 50.1	16.1
PH05B	08/27/2020	4	< 0.00199	< 0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	18.0
PH06	08/27/2020	1	< 0.00200	< 0.00200	<50.2	<50.2	<50.2	<50.2	< 50.2	483
PH06A	08/27/2020	2.5	< 0.00202	< 0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	1,200*
РН06В	08/27/2020	4.5	< 0.00201	< 0.00201	<50.0	<50.0	<50.0	<50.0	< 50.0	969

Table 1

#### Soil Analytical Results RDX 17 Federal #36H/RDX 17-25 Incident Number NRM2017643736 and NAB17129523392 Eddy County, New Mexico

Sample ID	Sample Date Sample Depth (ft bgs)		Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1	10	50	NE	NE	NE	1,000	2,500	20,000		
CH01	10/29/2020	1.5 - 2	< 0.00201	< 0.00201	<50.1	79.6	<50.1	79.6	79.6	344
CH01	10/29/2020	3.5 - 4	< 0.00200	< 0.00200	<13.9	16.3	<11.5	16.3	16.3	3,230
CH01	10/29/2020	5.5 - 6	< 0.00202	< 0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	606
CH02	10/29/2020	1 - 1.5	< 0.00201	0.107	<50.2	<50.2	<50.2	<50.2	< 50.2	342
CH02	10/29/2020	1.5 - 2	< 0.0196	0.594	88.2	748	59.4	896	896	660
CH02	10/29/2020	3.5 - 4	< 0.00202	0.647	60.4	298	<50.2	358	358	212
CH02	10/29/2020	5.5 - 6	< 0.00200	< 0.00200	<50.2	99.0	<50.2	99.0	99.0	148
CH02	10/29/2020	8 - 8.5	< 0.00202	< 0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	157

#### Notes:

ft - feet/foot

mg/kg - milligrams per kilograms

BTEX - benzene, toluene, ethylbenzene, and total xylenes

TPH - total petroleum hydrocarbons

GRO - gasoline range organics

DRO - diesel range organics

ORO - oil range organics

NMOCD - New Mexico Oil Conservation Division

NMAC - New Mexico Administrative Code

NE - Not Established

< - indicates result is less than the stated laboratory method practical quantitation limit

BOLD - indicates results exceed the higher of the background sample result or 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

		HR	ı						MONITORING WI	ELL COMPLETION	DIAGRAN	М
<b>/</b>				IAN	CE		Boring/Well Number: Location: MW-1 RDX Federal Com					
			ווו וו		NC		Date:	171 (	VV - 1	Client:		
	TM	3 0			11 3			12/8/	/2020	WPX En	ergy	
Drilling Me			Sampling I				Logged By:			Drilled By:		
	Air Rotar	У	C 1D		one		G 175	J. Lin	n, PG	Talon L	PE	
Gravel Pacl	k Type: 0/20 San	ıd	Gravel Pac	k Depth Inte	ags		Seal Type:	one	Seal Depth Interval: None	Latitude: 32.0496	56	
Casing Typ		Diameter:		Depth Inter	val:			Depth (ft. BGS		Longitude:	130	
PVC		2-inch		0-105 ft				11	10	-103.904	054	
Screen Typ	e:	Slot:		Diameter:		Interval:	Well Total D	epth (ft. BGS):		Depth to Water (ft. BTOC):		
PVC	<b>.</b>	0.010-ii	ıch	2-inch	105 -	110 ft		11	10	> 110	12/16/202	20
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Litholog	y/Remarks	Well Completic	on
0 5 10 15 20 25 30 35 40	NM	L	D	N	N	NM	CE	NS	Buff to pale pin	k colored caliche	- - - - -	
45 50 55 60	NM	L	D	N	N	NM	SW	NS		l graded sand with or silt		
65 70 75	NM	L	D	N	N	NM	SP	NS		range poorly graded ith minor silt		
80 85 90	NM	L	D	N	N	NM	SW-SM SW-SC	NS		ge well-graded sand :		
95 100 105	NM	L	D	N	N	NM	SP	NS		orange poorly graded or silt - TD: 110' bgs		

Comn	883063N, 1 nents: Chlo	103.9110 ride field	5389W screeni	GIC / SOII	508 West a labad, Ne  - SAMPL Field Scree Chloride ucted with	LING LOCening:	Pothole Name: PH01 8/27/2020 Site Name: RDX 17 Federal #36H/RDX 17-25 Incident Number: NRM2017643736 and NAB1712952339 WSP Job Number: TE034820010 Logged By: Anna Byers Method: Back Hoe Hole Diameter: Not applicable Total Depth: 8 feet to distilled water. Values reported do not include a correction factor. rted BTEX and TPH concentrations below Closure Criteria for all initial soil samples.	
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
Dry Dry Dry Dry	9,668 7,028 8,228 7,604 >2,464	NA NA NA NA	No No No No	PH01A PH01B PH01C	1 _ 2 _ 3 _ 4 _ 5 _ 6 6		SP-SM	brown, poorly-graded sand (f.) with gravel to cobble sized grains with no plasticity or odor, including root fragments light brown to tan colored caliche; moderately cemented sand (f.) with gravel to cobble sized inclusions; odorless; cementation decreases with depth
Dry Dry	2,208 1,424	NA NA	No No		7.5 8	7.5 - 8 Tota	cche	well-cemented caliche shelf; increased finer grains  well-cemented caliche shelf  /Back Hoe Refusal

7			7		WS	P USA		Pothole Name: Date:
\					****	I OOA		PH02 8/27/2020
	<b>.</b> .				08 West 9	Stevens S	Street	Site Name: RDX 17 Federal #36H/RDX 17-25
				Cai	Isbad, Nev	м Mexico	88220	Incident Number: NRM2017643736 and NAB1712952339
							WSP Job Number: TE034820010	
		LITH	OLO	GIC / SOII	SAMPL	ING LO	G	Logged By: Anna Byers Method: Back Hoe
Lat/Lo	•				Field Scree	ening:		Hole Diameter: Total Depth:
	370579N, <sup>-</sup>				Chloride			Not applicable 7.25 feet
								to distilled water. Values reported do not include a correction factor. ted BTEX and TPH concentrations below Closure Criteria for all initial soil samples.
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
					- - -	0		brown, poorly-graded sand (f.) with gravel to cobble sized grains
Dry	9,668	NA	No	PH02	1 _	1	SP-SM	with no plasticity or odor, including root fragments
Dry	4,392	NA	No	PH02A	2	- - 2	cche	light brown to tan colored caliche; moderately cemented sand (f.) with gravel to cobble sized inclusions; odorless; cementation decreases with depth
Dry	2,652	NA	No		3	3	cche	
Dry	3,160	NA	No	PH02B	4	4	cche	
Dry	-	NA	No		5	5 -	cche	
Dry	232	NA	No		6 <u>-</u>	6 - -	cche	
Dry	820	NA	No		7.25	7.25	cche	well-cemented caliche shelf; increased finer grains

7.25 cche well-cemented caliche shelf; increased finer grains
Total Depth/Back Hoe Refusal

	<b>'</b>		OLOG		WS 508 West S rlsbad, Ner	PH03 Site Na Incider WSP	e Name:  ame: RDX 17 Federal #3  at Number: NRM201764  lob Number: TE0348200  d By: Anna Byers	3736 and NAB1712952339			
	3606184N,				Field Scree Chloride	· ·		Not ap	viameter: plicable	Total Depth: 4 feet	
				-						clude a correction factor. sure Criteria for all initial soil samples.	
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol		Lithology/Remarks		
Dry	824	NA	No	PH03	1 _	0 - - 1 -	SP-SM		graded sand (f.) wi ity or odor, includin	th gravel to cobble sized grains g root fragments	
Dry	1,024	NA	No	PH03	2	2	SP-SM				
Dry	<112	NA	No	PH03B	3 _	- - -	SP-SM				
Dry	<120	NA	No	PH03C	4	4	SP-SM	-1 D 41-			

Total Depth

								Pothole Name: Date:
					WS	SP USA		PH04 8/27/2020
					508 West 9	Stevens S	Street	Site Name: RDX 17 Federal #36H/RDX 17-25
				Car	rlsbad, Nev	w Mexico	Incident Number: NRM2017643736 and NAB1712952339	
							WSP Job Number: TE034820010	
		LITH	OLO	GIC / SOIL			G	Logged By: Anna Byers Method: Back Hoe
	377848N, 1			1	Field Scree Chloride			Hole Diameter: Total Depth:  Not applicable 7.75 feet
								to distilled water. Values reported do not include a correction factor. rted BTEX and TPH concentrations below Closure Criteria for all initial soil samples.
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)		/Rock nbol	Lithology/Remarks
Dry	<112	NA	No	PH04	1	0 1 1		brown, poorly-graded sand (f.) with gravel to cobble sized grains  with no plasticity or odor, including root fragments
Dry	<112	NA	No	PH04A	2	<u>-</u> 2	SP-SM	1
Dry	<112	NA	No		3		SP-SM	Л
Dry	<120	NA	No	PH04B	4	4 		Ilight brown to tan colored caliche; poorly cemented sand (f.) with gravel to cobble sized inclusions; odorless; cementation decreases with depth
Dry	<120	NA	No		6 _	- - 6 - - -	cche	
Dry	<120	NA	No	l'	7.75	7.75	cche	well-cemented caliche shelf; increased finer grains
							Tot	otal Depth

7			7		WS	P USA	Pothole Name: Date: PH05 8/27/2020	Ī			
\					508 West 9	Stovene 9	Stroot	Site Name: RDX 17 Federal #36H/RDX 17-25	$\dashv$		
				Cai	rlsbad, Nev	w Mexico	88220	Incident Number: NRM2017643736 and NAB1712952339	ᅦ		
					, ,			WSP Job Number: TE034820010			
		LITH	OLO	GIC / SOIL	LSAMPL	ING LO	G	Logged By: Anna Byers Method: Back Hoe	٦		
Lat/Lo	ng:				Field Scree			Hole Diameter: Total Depth:	-		
32.048	395548N, 1				Chloride		Not applicable 8 feet				
							to distilled water. Values reported do not include a correction factor. ted BTEX and TPH concentrations below Closure Criteria for all initial soil samples.				
Moisture Content	Content Chloride (ppm) Vapor (ppm) Staining				Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks			
					_	0					
Dry	<120	NA	No	PH05	1	- - 1	SP-SM	brown, poorly-graded sand (f.) with gravel to cobble sized grains with no plasticity or odor, including root fragments			
Dry	<120	NA	No	PH05A	2	<u> </u>		light brown to tan colored caliche; moderately cemented sand (f.) with gravel to cobble sized inclusions; odorless; cementation decreases with depth			
Dry	<120	NA	No		3		cche				
Dry	<120	NA	No	PH05B	4	4	cche				
					- - -	5 					
Dry	<120	NA	No		6	<u> </u>	cche				
					-	7					
Dry	188	NA	No		8	<del>-</del> 8		consolidated caliche; increase of finer sand grains			
							To	otal Depth			

								Pothole Name: Date:			
			7		WS	P USA		PH06 8/27/2020			
,				ı	508 West S	Stevens S	Street	Site Name: RDX 17 Federal #36H/RDX 17-25			
				Cai	rlsbad, Ne	w Mexico	88220	Incident Number: NRM2017643736 and NAB1712952339			
		_						WSP Job Number: TE034820010			
		LITH	OLO	SIC / SOII	SAMPL	ING LO	Logged By: Anna Byers Method: Back Hoe				
Lat/Lo	•				Field Scree	ening:		Hole Diameter: Total Depth:			
	865400N, 1				Chloride	- A. AIIIAI		Not applicable 6 feet			
								to distilled water. Values reported do not include a correction factor. ted BTEX and TPH concentrations below Closure Criteria for all initial soil samples.			
Moisture Content	Content Chloride (ppm) Vapor (ppm) Staining				Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks			
Dry	232	NA	No	PH06	1 <u>-</u>	_ 0 - - - 1 - -	cche	light brown to tan colored caliche; moderately cemented sand (f.) with gravel to cobble sized inclusions; odorless; cementation decreases with depth			
Dry	1,424	NA	No	PH06A	2.5	2.5	cche				
Dry	1,024	NA	No		3	3	cche				
Dry	844	NA	No	PH06B	4.5	- - - - - 4.5 - -	cche				
Dry	232	NA	No		6	6	cche				
	Total Depth										

CH01

CH01

Dry

Dry

224

364

NA

NA

No

No

7	11	51	)		WSP USA				Pothole Name: CH01	Date: 10/29/2020		
				Co	508 West S rlsbad, Nev	Stevens S	Street		Site Name: RDX 17 Federal #3			
				Cai	ISDau, Ne	W WEXICO	Incident Number: NRM2017643736 and NAB1712952339					
						WSP Job Number: TE034820010						
		LITH	OLO	GIC / SOII		Logged By: Anna Byers	Method: Shaw Core Drill					
Lat/Lo 32.048	ong: 888628N, <sup>-</sup>	103.9108	8443W		3				Hole Diameter: Not applicable	Total Depth: 6 feet		
				0					ater. Values reported do not include a correction factor. d TPH concentrations below Closure Criteria for all initial soil samples.			
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks				
Dry	1,740	NA	No	CH01	2	2	cche		aliche decreasing cementation with depth, tan colored, gravel d sand (c.), moist, no odor			

Total Depth

SP

(c.), moist, light brown, no odor

cche Caliche, poorly cemented, tan gravel and sand (c.)

WSP USA									Pothole Name: CH02	Date: 10/29/2	2020	
					508 West S	Stevens S	street		Site Name: RDX 17 Federal #36H/RDX 17-25			
				Car	rlsbad, Nev	w Mexico	88220		Incident Number: NRM2017643736 and NAB1712952339			
			2:0		CALLED	:::::			WSP Job Number: TE(			
1 -4/1		LITH	OLOG	GIC / SOIL				Logged By: Anna Byers		d: Shaw Core Drill		
Lat/Loi 32.048	ng: 380899N, 1	103.9108/	0971W		Field Scree Chloride	ining:			Hole Diameter: Not applicable	Total D 8.5 fee		
	,					a 1:4 dilutic	on of soil to		ater. Values reported do			
Vapor v	/apor was not field screened (NA), because the laboratory analytical results reported BTEX and TPH concentrations below Closure Criteria for all initial soil samples.											
Moisture Content	Content Chloride (ppm) Vapor (ppm) Staining			Sample #	Sample Depth (ft bgs)	(ft bgs)	USCS/Rock Symbol		Litt	Lithology/Remarks		
Dry Dry	224 516	NA NA	No No	CH02 CH02	1 2	1 2		caliche, <sup>,</sup>	well consolidated, (	gravel poorly s	orted, no odor	
Dry	316	NA	No	CH02	3 -	3 4	SP	(c.), light	brown, mild odor			
Dry	148	NA	No	CH02	5	5 6	SP	(c.), light	brown, less odor			
					7 _	- - - 7 -						
Dry	120	NA	No	CH02	8	8		caliche, ı	mod. cemented, no	o odor		



PHOTOGRAPHIC LOG									
WPX Energy Permian,	RDX 17 Federal #36H/RDX 17-25	TE034820010							
LLC.	Eddy County, New Mexico								

 Photo No.
 Date

 1
 August 27, 2020

North view of the release area before delineation activities.



Photo No. Date

2 August 27, 2020

South view of the release area before delineation activities.





PHOTOGRAPHIC LOG									
WPX Energy Permian,	RDX 17 Federal #36H/RDX 17-25	TE034820010							
LLC.	Eddy County, New Mexico								

Photo No. Date

3 August 27, 2020

East view of the release area before delineation activities.



Photo No.Date4August 27, 2020Southwest view of the Site during

delineation activities.





# Certificate of Analysis Summary 671316 WSP USA, Dallas, TX

**Project Name: RDX 17-25** 

Project Id:

**Project Location:** 

**Contact:** 

034820010

Chris McKisson

Eddy County

**Date Received in Lab:** Fri 08.28.2020 14:08

**Report Date:** 01.12.2021 16:10

Project Manager: Jessica Kramer

	Lab Id:	671316-0	001	671316-0	002	671316-0	003	671316-0	004	671316-0	005	671316-0	)06
Analysis Requested	Field Id:	PH01		PH01	A	PH01 B	•	PH01 C	:	PH02		PH02 A	ı
Anaiysis Requesieu	Depth:	1- ft		2- ft		4- ft		6- ft		1- ft		2- ft	
	Matrix:	SOIL	,	SOIL		SOIL	,	SOIL	,	SOIL		SOIL	r
	Sampled:	08.27.2020	09:19	08.27.2020 09:39		08.27.2020 09:54		08.27.2020 12:29		08.27.2020 10:05		08.27.2020	10:15
BTEX by EPA 8021B	Extracted:	08.28.2020	16:51	08.28.2020 16:51		08.28.2020	16:51	08.28.2020 16:51		08.28.2020	16:51	08.28.2020	16:51
	Analyzed:	08.28.2020	23:27	08.28.2020	23:47	08.29.2020	00:07	08.29.2020	01:23	08.29.2020	01:44	08.29.2020	02:04
	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	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199
Toluene		< 0.00198	<0.00198 0.00198		0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199
Ethylbenzene		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199
m,p-Xylenes		< 0.00395	< 0.00395 0.00395		0.00399	< 0.00399	0.00399	< 0.00397	0.00397	< 0.00398	0.00398	< 0.00398	0.00398
o-Xylene		< 0.00198	<0.00198 0.00198		0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199
Total Xylenes		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199
Total BTEX		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199
Inorganic Anions by EPA 300	Extracted:	08.28.2020	15:05	08.28.2020 15:05		08.28.2020 15:05		08.28.2020	15:05	08.28.2020 15:05		08.28.2020 15:0	
	Analyzed:	08.28.2020	19:44	08.28.2020	19:50	08.28.2020	19:55	08.28.2020	20:01	08.28.2020	20:17	08.28.2020	20:23
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		12300	198	3750	50.1	3720	50.2	6480	49.5	2820	49.9	17700	198
TPH by SW8015 Mod	Extracted:	08.28.2020	17:15	08.28.2020	17:15	08.28.2020	17:15	08.28.2020	17:15	08.28.2020	17:15	08.28.2020	17:15
	Analyzed:	08.29.2020	03:14	08.29.2020	03:35	08.29.2020	03:55	08.29.2020	04:15	08.29.2020	04:56	08.29.2020	05:16
	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	< 50.1	50.1	<49.9	49.9	<49.9	49.9	<49.9	49.9	< 50.1	50.1
Diesel Range Organics (DRO)		< 50.0	50.0	<50.1	50.1	<49.9	49.9	<49.9	49.9	69.5	49.9	<50.1	50.1
Motor Oil Range Hydrocarbons (MRO)		< 50.0	<50.0 50.0		50.1	<49.9	49.9	<49.9	49.9	<49.9	49.9	<50.1	50.1
Total TPH		< 50.0	<50.0 50.0		50.1	<49.9	49.9	<49.9	49.9	69.5	49.9	<50.1	50.1

BRL - Below Reporting Limit

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

Jessica Vramer



# Certificate of Analysis Summary 671316 WSP USA, Dallas, TX

**Project Name: RDX 17-25** 

**Project Id:** 

034820010

**Contact: Project Location:**  Chris McKisson **Eddy County** 

**Date Received in Lab:** Fri 08.28.2020 14:08

**Report Date:** 01.12.2021 16:10

Project Manager: Jessica Kramer

	Lab Id:	671316-0	007	671316-0	800	671316-0	009	671316-	010	671316-0	011	671316-0	)12
Analysis Requested	Field Id:	PH02	В	PH03	;	PH03 A		PH03 E	3	PH03 C		PH04	
Anaiysis Requestea	Depth:	4- ft		1- ft		2- ft		3- ft		4- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL	,	SOIL		SOIL		SOIL	,
	Sampled:	08.27.2020	10:23	08.27.2020	08.27.2020 10:47 08.2		08.27.2020 11:07		08.27.2020 11:16		08.27.2020 11:22		14:33
BTEX by EPA 8021B	Extracted:	08.28.2020	16:51	08.28.2020	08.28.2020 16:51		16:51	08.28.2020 16:51		08.28.2020 16:51		08.28.2020	16:51
	Analyzed:	08.29.2020	02:24	08.29.2020	02:45	08.29.2020	03:05	08.29.2020	03:26	08.29.2020	03:46	08.29.2020	04:06
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200
Toluene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200
Ethylbenzene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200
m,p-Xylenes		< 0.00399	<0.00399 0.00399		0.00401	< 0.00403	0.00403	< 0.00402	0.00402	< 0.00397	0.00397	< 0.00399	0.00399
o-Xylene		< 0.00200	<0.00200 0.00200		0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200
Total Xylenes		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200
Total BTEX		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200
Inorganic Anions by EPA 300	Extracted:	08.28.2020	15:05	08.28.2020 15:05		08.28.2020	15:05	08.28.2020	15:05	08.28.2020 15:05		08.28.2020 15:05	
	Analyzed:	08.28.2020	20:29	08.28.2020	20:34	08.28.2020	20:51	08.28.2020	20:57	08.28.2020	21:02	08.28.2020	21:08
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3180	49.7	1890	49.9	1180	49.8	512	49.9	227	9.96	55.4	9.98
TPH by SW8015 Mod	Extracted:	08.28.2020	17:15	08.28.2020	17:15	08.28.2020	17:15	08.28.2020	17:15	08.28.2020	17:15	08.28.2020	17:15
	Analyzed:	08.29.2020	05:37	08.29.2020	05:57	08.29.2020	06:17	08.29.2020	06:37	08.29.2020	06:57	08.29.2020	07:18
	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	<49.9	49.9	<49.9	49.9	< 50.0	50.0	<50.1	50.1	< 50.0	50.0
Diesel Range Organics (DRO)		< 50.0	50.0	<49.9	49.9	<49.9	49.9	< 50.0	50.0	<50.1	50.1	< 50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0		<49.9	49.9	<49.9	49.9	< 50.0	50.0	<50.1	50.1	< 50.0	50.0
Total TPH		< 50.0	50.0	<49.9	49.9	<49.9	49.9	< 50.0	50.0	<50.1	50.1	< 50.0	50.0

BRL - Below Reporting Limit

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

Jessica Vramer



# Certificate of Analysis Summary 671316 WSP USA, Dallas, TX

**Project Name: RDX 17-25** 

Project Id:

**Project Location:** 

**Contact:** 

034820010

Chris McKisson

Eddy County

**Date Received in Lab:** Fri 08.28.2020 14:08

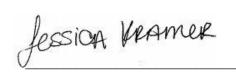
**Report Date:** 01.12.2021 16:10

Project Manager: Jessica Kramer

	Lab Id:	671316-0	013	671316-0	14	671316-0	)15	671316-0	)16	671316-0	)17	671316-0	018
A sumbosis Domesos de d	Field Id:	PH04	A	PH04 I	3	PH05		PH05 A		PH05 B		PH06	
Analysis Requested	Depth:	2- ft		4- ft		1-		2-		4-		1-	
	Matrix:	SOIL	,	SOIL		SOIL		SOIL	,	SOIL		SOIL	
	Sampled:	08.27.2020	14:38	08.27.2020	27.2020 14:44		08.27.2020 15:23		08.27.2020 15:33		08.27.2020	16:37	
BTEX by EPA 8021B	Extracted:	08.28.2020	16:51	08.28.2020 17:56		08.28.2020	17:56	08.28.2020 17:56		08.28.2020 17:56		08.28.2020	17:56
	Analyzed:	08.29.2020	04:27	08.29.2020	07:59	08.29.2020	08:20	08.29.2020	08:40	08.29.2020	09:01	08.29.2020	09:21
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Toluene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Ethylbenzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
m,p-Xylenes		< 0.00399	<0.00399 0.00399		0.00396	< 0.00396	0.00396	< 0.00399	0.00399	< 0.00398	0.00398	< 0.00401	0.00401
o-Xylene		< 0.00200	<0.00200 0.00200		0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Total Xylenes		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Total BTEX		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Inorganic Anions by EPA 300	Extracted:	08.28.2020	15:05	08.28.2020 17:09		08.28.2020	17:09	08.28.2020	17:09	08.28.2020	17:09	08.28.2020	17:09
	Analyzed:	08.28.2020	21:13	08.28.2020	21:47	08.28.2020	22:04	08.28.2020	22:09	08.28.2020	22:15	08.28.2020	22:20
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		23.1	9.98	<9.92	9.92	53.5	9.96	16.1	9.98	18.0	10.1	483	202
TPH by SW8015 Mod	Extracted:	08.28.2020	17:15	08.28.2020	17:15	08.28.2020	17:00	08.28.2020	17:00	08.28.2020	17:00	08.28.2020	17:00
	Analyzed:	08.29.2020	07:38	08.29.2020	07:58	08.28.2020	18:28	08.28.2020	19:29	08.28.2020	19:49	08.28.2020	20:09
	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	<49.8	49.8	<49.9	49.9	< 50.1	50.1	<49.8	49.8	<50.2	50.2
Diesel Range Organics (DRO)		< 50.0	50.0	<49.8	49.8	<49.9	49.9	< 50.1	50.1	<49.8	49.8	< 50.2	50.2
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0		<49.8	49.8	<49.9	49.9	< 50.1	50.1	<49.8	49.8	< 50.2	50.2
Total TPH		< 50.0	<50.0 50.0		49.8	<49.9	49.9	< 50.1	50.1	<49.8	49.8	<50.2	50.2

BRL - Below Reporting Limit

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eurofins Environment Testing

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# Certificate of Analysis Summary 671316

WSP USA, Dallas, TX

**Project Name: RDX 17-25** 

**Project Id:** 

034820010

**Date Received in Lab:** Fri 08.28.2020 14:08

**Contact:** 

**Project Location:** 

Chris McKisson **Eddy County** 

**Report Date:** 01.12.2021 16:10

Project Manager: Jessica Kramer

	7 7 7 7 7	671216.01	10	671216.00				
	Lab Id:	671316-01	19	671316-02	20			
Analysis Requested	Field Id:	PH06 A		PH06 B				
Thursts Requested	Depth:	2.5-		4.5-				
	Matrix:	SOIL		SOIL				
	Sampled:	08.27.2020 1	6:41	08.27.2020 1	6:55			
BTEX by EPA 8021B	Extracted:	08.28.2020 1	7:56	08.28.2020 1	7:56			
	Analyzed:	08.29.2020 0	9:41	08.29.2020 1	0:02			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Benzene		< 0.00202	0.00202	< 0.00201	0.00201			
Toluene		< 0.00202	0.00202	< 0.00201	0.00201			
Ethylbenzene		< 0.00202	0.00202	< 0.00201	0.00201			
m,p-Xylenes		< 0.00403	0.00403	< 0.00402	0.00402			
o-Xylene			0.00202		0.00201			
Total Xylenes			0.00202		0.00201			
Total BTEX		< 0.00202	0.00202	< 0.00201	0.00201			
Inorganic Anions by EPA 300	Extracted:	08.28.2020 1	7:09	08.28.2020 1	7:09			
	Analyzed:	08.28.2020 2	22:37	08.28.2020 2	22:43			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Chloride		1200	49.5	969	9.98			
TPH by SW8015 Mod	Extracted:	08.28.2020 1	7:00	08.28.2020 1	7:00			
	Analyzed:	08.28.2020 2	20:29	08.28.2020 2	20:50			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<50.0	50.0			
Diesel Range Organics (DRO)		<49.8	49.8	<50.0	50.0			
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	< 50.0	50.0			
Total TPH		<49.8	49.8	< 50.0	50.0			

BRL - Below Reporting Limit

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

Jessica Weamer



# **Analytical Report 671316**

for

### **WSP USA**

**Project Manager: Chris McKisson** 

RDX 17-25 034820010 01.12.2021

Collected By: Client

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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8) Xenco-Tampa: Florida (E87429), North Carolina (483)



01.12.2021

Project Manager: Chris McKisson

WSP USA

2777 N. Stemmons Freeway, Suite 1600

Dallas, TX 75207

Reference: Eurofins Xenco, LLC Report No(s): 671316

**RDX 17-25** 

Project Address: 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 Eurofins Xenco, LLC Report Number(s) 671316. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 671316 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vermer

Project Manager

A Small Business and Minority Company

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

# **Sample Cross Reference 671316**

# WSP USA, Dallas, TX

RDX 17-25

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
PH01	S	08.27.2020 09:19	1 ft	671316-001
PH01 A	S	08.27.2020 09:39	2 ft	671316-002
PH01 B	S	08.27.2020 09:54	4 ft	671316-003
PH01 C	S	08.27.2020 12:29	6 ft	671316-004
PH02	S	08.27.2020 10:05	1 ft	671316-005
PH02 A	S	08.27.2020 10:15	2 ft	671316-006
PH02 B	S	08.27.2020 10:23	4 ft	671316-007
PH03	S	08.27.2020 10:47	1 ft	671316-008
PH03 A	S	08.27.2020 11:07	2 ft	671316-009
PH03 B	S	08.27.2020 11:16	3 ft	671316-010
PH03 C	S	08.27.2020 11:22	4 ft	671316-011
PH04	S	08.27.2020 14:33	1 ft	671316-012
PH04 A	S	08.27.2020 14:38	2 ft	671316-013
PH04 B	S	08.27.2020 14:44	4 ft	671316-014
PH05	S	08.27.2020 15:18	1	671316-015
PH05 A	S	08.27.2020 15:23	2	671316-016
PH05 B	S	08.27.2020 15:33	4	671316-017
PH06	S	08.27.2020 16:37	1	671316-018
PH06 A	S	08.27.2020 16:41	2.5	671316-019
PH06 B	S	08.27.2020 16:55	4.5	671316-020

#### **CASE NARRATIVE**

eurofins Environment Testing Xenco

Client Name: WSP USA Project Name: RDX 17-25

 Project ID:
 034820010
 Report Date:
 01.12.2021

 Work Order Number(s):
 671316
 Date Received:
 08.28.2020

#### Sample receipt non conformances and comments:

#### Sample receipt non conformances and comments per sample:

None

#### **Analytical non conformances and comments:**

Batch: LBA-3135936 TPH by SW8015 Mod

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

by re-analysis.

Samples affected are: 671316-015 S,671316-015 SD.

### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH01

Matrix: Soil

Date Received:08.28.2020 14:08

Lab Sample Id: 671316-001

Date Collected: 08.27.2020 09:19

Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

MAB

Analyst: MAB

Date Prep: 08.28.2020 15:05

% Moisture:

Basis:

: Wet Weight

Seq Number: 3135891

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	12300	198	mg/kg	08.28.2020 19:44		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

Analyst: DTH
Seq Number: 3135945

Date Prep:

08.28.2020 17:15

% Moisture:

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	08.29.2020 03:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	08.29.2020 03:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	08.29.2020 03:14	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	08.29.2020 03:14	U	1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	95	%	70-135	08.29.2020 03:14
o-Terphenyl	84-15-1	100	%	70-135	08.29.2020 03:14

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH01 Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-001 Date Collected: 08.27.2020 09:19 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

1,4-Difluorobenzene

Analyst: MAB Date Prep: 08.28.2020 16:51 % Moisture:

540-36-3

Seq Number: 3135888

Basis: Wet Weight

08.28.2020 23:27

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	08.28.2020 23:27	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	08.28.2020 23:27	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	08.28.2020 23:27	U	1
m,p-Xylenes	179601-23-1	< 0.00395	0.00395		mg/kg	08.28.2020 23:27	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	08.28.2020 23:27	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	08.28.2020 23:27	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	08.28.2020 23:27	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	102	%	70-130	08.28.2020 23:27		

95

70-130



#### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH01 A

Matrix: Soil

Date Received:08.28.2020 14:08

Lab Sample Id: 671316-002

Date Collected: 08.27.2020 09:39

Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: M

Analyst:

MAB MAB

Date Prep:

08.28.2020 15:05

% Moisture:

Basis: Wet Weight

Seq Number: 3135891

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 3750
 50.1
 mg/kg
 08.28.2020 19:50
 5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

Analyst: DTH
Seq Number: 3135945

Date Prep:

08.28.2020 17:15

% Moisture:

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.1	50.1		mg/kg	08.29.2020 03:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.1	50.1		mg/kg	08.29.2020 03:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	08.29.2020 03:35	U	1
Total TPH	PHC635	< 50.1	50.1		mg/kg	08.29.2020 03:35	U	1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH01 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-002 Date Collected: 08.27.2020 09:39 Sample Depth: 2 ft

Prep Method: SW5035A

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Seq Number: 3135888

Analyst: MAB Date Prep: 08.28.2020 16:51

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	08.28.2020 23:47	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	08.28.2020 23:47	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	08.28.2020 23:47	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	08.28.2020 23:47	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	08.28.2020 23:47	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	08.28.2020 23:47	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	08.28.2020 23:47	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.28.2020 23:47	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.28.2020 23:47	

#### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH01 B

Seq Number: 3135891

Matrix: Soil

Date Received:08.28.2020 14:08

Lab Sample Id: 671316-003

Date Collected: 08.27.2020 09:54

Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

р

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep: 08

08.28.2020 15:05

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3720	50.2	mg/kg	08.28.2020 19:55		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

Analyst: DTH
Seq Number: 3135945

Date Prep:

08.28.2020 17:15

% Moisture:

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	08.29.2020 03:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	08.29.2020 03:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	08.29.2020 03:55	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	08.29.2020 03:55	U	1
Surrogate	C	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH01 B Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-003 Date Collected: 08.27.2020 09:54 Sample Depth: 4 ft

Prep Method: SW5035A

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB
Seq Number: 3135888

Date Prep: 08.28.2020 16:51

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	08.29.2020 00:07	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	08.29.2020 00:07	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	08.29.2020 00:07	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	08.29.2020 00:07	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	08.29.2020 00:07	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	08.29.2020 00:07	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	08.29.2020 00:07	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	08.29.2020 00:07	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.29.2020 00:07	

### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH01 C

Matrix: Soil

Date Received:08.28.2020 14:08

Lab Sample Id: 671316-004

Seq Number: 3135891

Date Collected: 08.27.2020 12:29

Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep:

08.28.2020 15:05

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6480	49.5	mg/kg	08.28.2020 20:01		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

Analyst: DTH
Seq Number: 3135945

Date Prep: 08.28.2020 17:15

% Moisture:

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	08.29.2020 04:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	08.29.2020 04:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	08.29.2020 04:15	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	08.29.2020 04:15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	94	%	70-135	08.29.2020 04:15
o-Terphenyl	84-15-1	98	%	70-135	08.29.2020 04:15

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH01 C Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-004 Date Collected: 08.27.2020 12:29 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Analyst: MAB Date Prep: 08.28.2020 16:51 % Moisture:

Seq Number: 3135888

Date Prep: 08.28.2020 16.31

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	08.29.2020 01:23	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	08.29.2020 01:23	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	08.29.2020 01:23	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	08.29.2020 01:23	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	08.29.2020 01:23	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	08.29.2020 01:23	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	08.29.2020 01:23	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	110	%	70-130	08.29.2020 01:23		
1,4-Difluorobenzene		540-36-3	101	%	70-130	08.29.2020 01:23		

### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH02

Seq Number: 3135891

Matrix: Soil

Date Received:08.28.2020 14:08

Lab Sample Id: 671316-005

Date Collected: 08.27.2020 10:05

Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep:

08.28.2020 15:05

% Moisture:

Basis:

Wet Weight

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 2820
 49.9
 mg/kg
 08.28.2020 20:17
 5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

08.29.2020 04:56

Tech:

DTH

Analyst: DTH
Seq Number: 3135945

o-Terphenyl

Date Prep:

08.28.2020 17:15

% Moisture:

Basis:

70-135

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	08.29.2020 04:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	69.5	49.9		mg/kg	08.29.2020 04:56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	08.29.2020 04:56	U	1
Total TPH	PHC635	69.5	49.9		mg/kg	08.29.2020 04:56		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	92	%	70-135	08.29.2020 04:56		

96

84-15-1

Wet Weight

# **Certificate of Analytical Results 671316**

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH02 Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-005 Date Collected: 08.27.2020 10:05 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Seq Number: 3135888

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199	mg/kg	08.29.2020 01:44	U	1
Toluene	108-88-3	< 0.00199	0.00199	mg/kg	08.29.2020 01:44	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199	mg/kg	08.29.2020 01:44	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398	mg/kg	08.29.2020 01:44	U	1
o-Xylene	95-47-6	< 0.00199	0.00199	mg/kg	08.29.2020 01:44	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199	mg/kg	08.29.2020 01:44	U	1
Total BTEX		< 0.00199	0.00199	mg/kg	08.29.2020 01:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.29.2020 01:44	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.29.2020 01:44	



### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH02 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-006

Date Collected: 08.27.2020 10:15

Sample Depth: 2 ft

Prep Method: E300P

Analytical Method: Inorganic Anions by EPA 300

MAB

MAB

Date Prep:

% Moisture:

Seq Number: 3135891

Tech:

Analyst:

08.28.2020 15:05 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17700	198	mg/kg	08.28.2020 20:23		20

Analytical Method: TPH by SW8015 Mod

DTH

Tech: Analyst:

Seq Number: 3135945

DTH

Date Prep:

08.28.2020 17:15

% Moisture:

Prep Method: SW8015P

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.1	50.1		mg/kg	08.29.2020 05:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.1	50.1		mg/kg	08.29.2020 05:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	08.29.2020 05:16	U	1
Total TPH	PHC635	< 50.1	50.1		mg/kg	08.29.2020 05:16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	98	%	70-135	08.29.2020 05:16
o-Terphenyl	84-15-1	100	%	70-135	08.29.2020 05:16

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH02 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-006 Date Collected: 08.27.2020 10:15 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Analyst: MAB Date Prep: 08.28.2020 16:51 % Moisture:

Seq Number: 3135888

Date Prep: 08.28.2020 16.31

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	08.29.2020 02:04	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	08.29.2020 02:04	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	08.29.2020 02:04	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	08.29.2020 02:04	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	08.29.2020 02:04	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	08.29.2020 02:04	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	08.29.2020 02:04	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	105	%	70-130	08.29.2020 02:04		
1,4-Difluorobenzene		540-36-3	101	%	70-130	08.29.2020 02:04		



### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH02 B Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-007

Date Collected: 08.27.2020 10:23

Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

MAB

MAB Analyst: Seq Number: 3135891

Date Prep:

08.28.2020 15:05

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3180	49.7	mg/kg	08.28.2020 20:29		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

DTH Analyst: Seq Number: 3135945

08.28.2020 17:15 Date Prep:

% Moisture:

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	08.29.2020 05:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	08.29.2020 05:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	08.29.2020 05:37	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	08.29.2020 05:37	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	95	%	70-135	08.29.2020 05:37
o-Terphenyl	84-15-1	100	%	70-135	08.29.2020 05:37

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH02 B Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-007 Date Collected: 08.27.2020 10:23 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

% Moisture: MAB Analyst: Date Prep: 08.28.2020 16:51

Seq Number: 3135888

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	08.29.2020 02:24	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	08.29.2020 02:24	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	08.29.2020 02:24	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	08.29.2020 02:24	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	08.29.2020 02:24	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	08.29.2020 02:24	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	08.29.2020 02:24	U	1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	5	540-36-3	106	%	70-130	08.29.2020 02:24		

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.29.2020 02:24	
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.29.2020 02:24	

### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH03

Matrix: Soil

Date Received:08.28.2020 14:08

Lab Sample Id: 671316-008

Date Collected: 08.27.2020 10:47

Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep:

08.28.2020 15:05

% Moisture:

Basis: Wet Weight

Seq Number: 3135891

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1890	49.9	mg/kg	08.28.2020 20:34		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

Analyst: DTH
Seq Number: 3135945

Date Prep:

08.28.2020 17:15

% Moisture:

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	08.29.2020 05:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	08.29.2020 05:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	08.29.2020 05:57	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	08.29.2020 05:57	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	93	%	70-135	08.29.2020 05:57
o-Terphenyl	84-15-1	98	%	70-135	08.29.2020 05:57

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH03 Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-008 Date Collected: 08.27.2020 10:47 Sample Depth: 1 ft

Prep Method: SW5035A

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB Date Prep: 08.28.2020 16:51

% Moisture:

Seq Number: 3135888

Date Prep: 08.28.2020 16.31

Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	08.29.2020 02:45	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	08.29.2020 02:45	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	08.29.2020 02:45	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	08.29.2020 02:45	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	08.29.2020 02:45	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	08.29.2020 02:45	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	08.29.2020 02:45	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	101	%	70-130	08.29.2020 02:45		
1,4-Difluorobenzene		540-36-3	99	%	70-130	08.29.2020 02:45		

### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH03 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-009

Date Collected: 08.27.2020 11:07

Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep: 08.28.2020 15:05 % Moisture:

Basis:

Wet Weight

Seq Number: 3135891

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1180	49.8	mg/kg	08.28.2020 20:51		5

Analytical Method: TPH by SW8015 Mod

DTH Tech:

DTH Analyst: Seq Number: 3135945

1-Chlorooctane

o-Terphenyl

08.28.2020 17:15 Date Prep:

% Moisture:

Prep Method: SW8015P

08.29.2020 06:17

08.29.2020 06:17

Basis:

70-135

70-135

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	08.29.2020 06:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	08.29.2020 06:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	08.29.2020 06:17	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	08.29.2020 06:17	U	1
Surrogate	C	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

94

98

111-85-3

84-15-1

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH03 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-009 Date Collected: 08.27.2020 11:07 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Analyst: MAB Date Prep: 08.28.2020 16:51 % Moisture:

Seq Number: 3135888

Date Prep: 08.28.2020 16.31

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	08.29.2020 03:05	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	08.29.2020 03:05	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	08.29.2020 03:05	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	08.29.2020 03:05	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	08.29.2020 03:05	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	08.29.2020 03:05	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	08.29.2020 03:05	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	104	%	70-130	08.29.2020 03:05		
4-Bromofluorobenzene		460-00-4	109	%	70-130	08.29.2020 03:05		

### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH03 B

Matrix: Soil

Date Received:08.28.2020 14:08

Lab Sample Id: 671316-010

Date Collected: 08.27.2020 11:16

Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Seq Number: 3135891

Date Prep:

08.28.2020 15:05

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	512	49.9	mg/kg	08.28.2020 20:57		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

Analyst: DTH
Seq Number: 3135945

Date Prep: 08.28.2020 17:15

% Moisture:

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	08.29.2020 06:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	08.29.2020 06:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	08.29.2020 06:37	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	08.29.2020 06:37	U	1
Surrogate	•	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH03 B Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-010 Date Collected: 08.27.2020 11:16 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Analyst: MAB Date Prep:

Seq Number: 3135888

08.28.2020 16:51	% Moisture:	
08.28.2020 10.31	Basis:	Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	08.29.2020 03:26	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	08.29.2020 03:26	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	08.29.2020 03:26	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	08.29.2020 03:26	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	08.29.2020 03:26	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	08.29.2020 03:26	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	08.29.2020 03:26	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	105	%	70-130	08.29.2020 03:26		
4-Bromofluorobenzene		460-00-4	106	%	70-130	08.29.2020 03:26		

### WSP USA, Dallas, TX

RDX 17-25

Sample Id: **PH03** C Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-011

Date Collected: 08.27.2020 11:22

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Inorganic Anions by EPA 300

Tech:

MAB

MAB Analyst: Seq Number: 3135891 Date Prep:

08.28.2020 15:05

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	227	9.96	mg/kg	08.28.2020 21:02		1

Analytical Method: TPH by SW8015 Mod

Tech:

DTH

DTH Analyst: Seq Number: 3135945

Date Prep:

08.28.2020 17:15

% Moisture:

Prep Method: SW8015P

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.1	50.1		mg/kg	08.29.2020 06:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.1	50.1		mg/kg	08.29.2020 06:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	08.29.2020 06:57	U	1
Total TPH	PHC635	< 50.1	50.1		mg/kg	08.29.2020 06:57	U	1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Wet Weight

# **Certificate of Analytical Results 671316**

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH03 C Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-011 Date Collected: 08.27.2020 11:22 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Seq Number: 3135888

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198	mg/kg	08.29.2020 03:46	U	1
Toluene	108-88-3	< 0.00198	0.00198	mg/kg	08.29.2020 03:46	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198	mg/kg	08.29.2020 03:46	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397	mg/kg	08.29.2020 03:46	U	1
o-Xylene	95-47-6	< 0.00198	0.00198	mg/kg	08.29.2020 03:46	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198	mg/kg	08.29.2020 03:46	U	1
Total BTEX		< 0.00198	0.00198	mg/kg	08.29.2020 03:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.29.2020 03:46	
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.29.2020 03:46	

#### WSP USA, Dallas, TX

RDX 17-25

Sample Id: **PH04**  Matrix:

Date Received:08.28.2020 14:08

Lab Sample Id: 671316-012

Soil Date Collected: 08.27.2020 14:33

Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

MAB

MAB Analyst:

Seq Number: 3135891

Date Prep:

% Moisture: 08.28.2020 15:05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	55.4	9.98	mg/kg	08.28.2020 21:08		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

DTH Analyst: Seq Number: 3135945 Date Prep: 08.28.2020 17:15 % Moisture:

Basis:

Parameter	Cas Number	mber Result RL Units		Analysis Date	Flag	Dil		
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	08.29.2020 07:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	08.29.2020 07:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	08.29.2020 07:18	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	08.29.2020 07:18	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

**Environment Testing** 

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# **Certificate of Analytical Results 671316**

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH04 Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-012 Date Collected: 08.27.2020 14:33 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Analyst: MAB Date Prep: 08.28.2020 16:51 % Moisture:

Seq Number: 3135888

Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	08.29.2020 04:06	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	08.29.2020 04:06	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	08.29.2020 04:06	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	08.29.2020 04:06	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	08.29.2020 04:06	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	08.29.2020 04:06	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	08.29.2020 04:06	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	100	%	70-130	08.29.2020 04:06		
1,4-Difluorobenzene		540-36-3	101	%	70-130	08.29.2020 04:06		



### WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH04 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-013

Date Collected: 08.27.2020 14:38

Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep: 08.28.2020 15:05 % Moisture:

Basis:

Wet Weight

Seq Number: 3135891

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.1	9.98	mg/kg	08.28.2020 21:13		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

DTH Analyst: Seq Number: 3135945 Date Prep:

08.28.2020 17:15

% Moisture:

Basis:

Parameter	Cas Number	per Result RL Units An		Analysis Date	Flag	Dil		
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	08.29.2020 07:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	08.29.2020 07:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	08.29.2020 07:38	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	08.29.2020 07:38	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Wet Weight

# **Certificate of Analytical Results 671316**

# WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH04 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-013 Date Collected: 08.27.2020 14:38 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Analyst: MAB Date Prep: 08.28.2020 16:51 % Moisture:

Analyst. MAB Date Prep: 08.28.2020 10.31 Basis:

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200	mg/kg	08.29.2020 04:27	U	1
Toluene	108-88-3	< 0.00200	0.00200	mg/kg	08.29.2020 04:27	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200	mg/kg	08.29.2020 04:27	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399	mg/kg	08.29.2020 04:27	U	1
o-Xylene	95-47-6	< 0.00200	0.00200	mg/kg	08.29.2020 04:27	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200	mg/kg	08.29.2020 04:27	U	1
Total BTEX		< 0.00200	0.00200	mg/kg	08.29.2020 04:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.29.2020 04:27	
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.29.2020 04:27	

### WSP USA, Dallas, TX

RDX 17-25

Sample Id: **PH04 B**  Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-014

Date Collected: 08.27.2020 14:44

Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

MAB Tech:

Analyst:

MAB

Date Prep:

08.28.2020 17:09

% Moisture:

Basis:

Wet Weight

Prep Method: SW8015P

Seq Number: 3135892

**Parameter** Cas Number Result RL Units **Analysis Date** Flag Dil Chloride 16887-00-6 08.28.2020 21:47 U < 9.92 9.92 mg/kg 1

Analytical Method: TPH by SW8015 Mod

DTH Tech:

DTH Analyst: Seq Number: 3135945 Date Prep: 08.28.2020 17:15 % Moisture:

Basis:

Parameter	Cas Number	Number Result RL			Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	08.29.2020 07:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	08.29.2020 07:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	08.29.2020 07:58	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	08.29.2020 07:58	U	1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH04 B Matrix: Soil

> Date Collected: 08.27.2020 14:44 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

08.29.2020 07:59

Basis:

70-130

Date Received:08.28.2020 14:08

Wet Weight

Tech: MAB

Analyst:

Lab Sample Id: 671316-014

% Moisture: Date Prep: 08.28.2020 17:56

Seq Number: 3135889

1,4-Difluorobenzene

MAB

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	08.29.2020 07:59	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	08.29.2020 07:59	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	08.29.2020 07:59	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396		mg/kg	08.29.2020 07:59	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	08.29.2020 07:59	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	08.29.2020 07:59	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	08.29.2020 07:59	U	1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	4	60-00-4	105	%	70-130	08.29.2020 07:59		

95

540-36-3

**Environment Testing** 

## **Certificate of Analytical Results 671316**

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: **PH05**  Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-015

Date Collected: 08.27.2020 15:18

Sample Depth: 1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

MAB

MAB Analyst:

Date Prep: 08.28.2020 17:09 % Moisture:

Basis:

Wet Weight

Seq Number: 3135892

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	53.5	9.96	mg/kg	08.28.2020 22:04		1

Analytical Method: TPH by SW8015 Mod

DTH Tech:

Seq Number: 3135936

Analyst:

DTH

Date Prep:

08.28.2020 17:00

% Moisture:

Prep Method: SW8015P

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	08.28.2020 18:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	08.28.2020 18:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	08.28.2020 18:28	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	08.28.2020 18:28	U	1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH05 Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-015 Date Collected: 08.27.2020 15:18 Sample Depth: 1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Analyst: MAB Date Prep: 08.28.2020 17:56 % Moisture:

Seq Number: 3135889

Date Prep: 08.28.2020 17:30

Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	08.29.2020 08:20	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	08.29.2020 08:20	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	08.29.2020 08:20	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396		mg/kg	08.29.2020 08:20	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	08.29.2020 08:20	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	08.29.2020 08:20	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	08.29.2020 08:20	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	106	%	70-130	08.29.2020 08:20		
1,4-Difluorobenzene		540-36-3	100	%	70-130	08.29.2020 08:20		

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH05 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-016

Date Collected: 08.27.2020 15:23

Sample Depth: 2

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

Tech:

Analyst:

MAB

MAB Analyst: Seq Number: 3135892 Date Prep:

% Moisture: 08.28.2020 17:09

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.1	9.98	mg/kg	08.28.2020 22:09		1

Analytical Method: TPH by SW8015 Mod

DTH

Seq Number: 3135936

DTH

Date Prep:

08.28.2020 17:00

% Moisture:

Prep Method: SW8015P

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.1	50.1		mg/kg	08.28.2020 19:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.1	50.1		mg/kg	08.28.2020 19:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	08.28.2020 19:29	U	1
Total TPH	PHC635	< 50.1	50.1		mg/kg	08.28.2020 19:29	U	1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	124	%	70-135	08.28.2020 19:29
o-Terphenyl	84-15-1	95	%	70-135	08.28.2020 19:29

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH05 A

Lab Sample Id: 671316-016

Matrix: Soil

Date Received:08.28.2020 14:08

Sample Depth: 2

Analytical Method: BTEX by EPA 8021B

Date Collected: 08.27.2020 15:23

Prep Method: SW5035A

Tech: MAB

Seq Number: 3135889

Analyst:

MAB

Date Prep:

08.28.2020 17:56

% Moisture: Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	08.29.2020 08:40	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	08.29.2020 08:40	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	08.29.2020 08:40	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	08.29.2020 08:40	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	08.29.2020 08:40	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	08.29.2020 08:40	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	08.29.2020 08:40	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	08.29.2020 08:40	
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.29.2020 08:40	

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH05 B Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-017

Date Collected: 08.27.2020 15:33

Sample Depth: 4

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

MAB

MAB Analyst: Seq Number: 3135892 Date Prep: 08.28.2020 17:09 % Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.0	10.1	mg/kg	08.28.2020 22:15		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

DTH Analyst: Seq Number: 3135936

Date Prep: 08.28.2020 17:00 % Moisture:

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	08.28.2020 19:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	08.28.2020 19:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	08.28.2020 19:49	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	08.28.2020 19:49	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	108	%	70-135	08.28.2020 19:49
o-Terphenyl	84-15-1	93	%	70-135	08.28.2020 19:49

Wet Weight

## **Certificate of Analytical Results 671316**

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH05 B Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-017 Date Collected: 08.27.2020 15:33 Sample Depth: 4

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Seq Number: 3135889

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	08.29.2020 09:01	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	08.29.2020 09:01	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	08.29.2020 09:01	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	08.29.2020 09:01	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	08.29.2020 09:01	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	08.29.2020 09:01	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	08.29.2020 09:01	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	70-130	08.29.2020 09:01	
1,4-Difluorobenzene	540-36-3	98	%	70-130	08.29.2020 09:01	

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: **PH06** 

Seq Number: 3135892

Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-018

Date Collected: 08.27.2020 16:37

Sample Depth: 1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep:

08.28.2020 17:09

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	483	202	mg/kg	08.28.2020 22:20		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

DTH Analyst: Seq Number: 3135936

Date Prep:

08.28.2020 17:00

% Moisture:

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	08.28.2020 20:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.2	50.2		mg/kg	08.28.2020 20:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	08.28.2020 20:09	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	08.28.2020 20:09	U	1
Surrogate	C	as Number 9	% Recovery	Units	Limits	Analysis Date	Flag	

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH06 Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-018 Date Collected: 08.27.2020 16:37 Sample Depth: 1

Prep Method: SW5035A

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3135889

4-Bromofluorobenzene

Date Prep: 08.28.2020 17:56

460-00-4

% Moisture:

Basis: Wet Weight

08.29.2020 09:21

70-130

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	08.29.2020 09:21	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	08.29.2020 09:21	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	08.29.2020 09:21	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	08.29.2020 09:21	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	08.29.2020 09:21	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	08.29.2020 09:21	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	08.29.2020 09:21	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	105	%	70-130	08.29.2020 09:21		

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## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH06 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-019

Date Collected: 08.27.2020 16:41

Sample Depth: 2.5

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

MAB

MAB Analyst: Seq Number: 3135892

Date Prep: 08.28.2020 17:09 % Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1200	49.5	mg/kg	08.28.2020 22:37		

Analytical Method: TPH by SW8015 Mod

DTH

Tech: Analyst:

Seq Number: 3135936

DTH

08.28.2020 17:00

% Moisture:

Prep Method: SW8015P

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	08.28.2020 20:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	08.28.2020 20:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	08.28.2020 20:29	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	08.28.2020 20:29	U	1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Date Prep:

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	125	%	70-135	08.28.2020 20:29
o-Terphenyl	84-15-1	111	%	70-135	08.28.2020 20:29

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH06 A Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-019

Date Collected: 08.27.2020 16:41

Sample Depth: 2.5

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Seq Number: 3135889

Analyst:

MAB

Date Prep: 08.28.2020 17:56 % Moisture:

Basis: Wet Weight

Prep Method: SW5035A

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202	mg/kg	08.29.2020 09:41	U	1
Toluene	108-88-3	< 0.00202	0.00202	mg/kg	08.29.2020 09:41	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202	mg/kg	08.29.2020 09:41	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403	mg/kg	08.29.2020 09:41	U	1
o-Xylene	95-47-6	< 0.00202	0.00202	mg/kg	08.29.2020 09:41	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202	mg/kg	08.29.2020 09:41	U	1
Total BTEX		< 0.00202	0.00202	mg/kg	08.29.2020 09:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.29.2020 09:41	
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.29.2020 09:41	

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH06 B Matrix: Soil Date Received:08.28.2020 14:08

Lab Sample Id: 671316-020

Date Collected: 08.27.2020 16:55

Sample Depth: 4.5

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

Analyst:

MAB MAB

Date Prep:

08.28.2020 17:09

% Moisture:

Basis: Wet Weight

Seq Number: 3135892

**Analysis Date Parameter** Cas Number Result RL Units Flag Dil Chloride 16887-00-6 969 08.28.2020 22:43 9.98 mg/kg

Analytical Method: TPH by SW8015 Mod

DTH Tech:

DTH Analyst: Seq Number: 3135936

Date Prep: 08.28.2020 17:00 % Moisture:

Prep Method: SW8015P

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	08.28.2020 20:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	08.28.2020 20:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	08.28.2020 20:50	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	08.28.2020 20:50	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	97	%	70-135	08.28.2020 20:50
o-Terphenyl	84-15-1	98	%	70-135	08.28.2020 20:50

## WSP USA, Dallas, TX

RDX 17-25

Sample Id: PH06 B Matrix: Soil

Date Received:08.28.2020 14:08

Lab Sample Id: 671316-020 Date Collected: 08.27.2020 16:55

Sample Depth: 4.5

Analytical Method: BTEX by EPA 8021B

MAB

Prep Method: SW5035A

Tech: MAB

Analyst:

Date Prep: 08.28.2020 17:56 % Mois

% Moisture:

Seq Number: 3135889

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	08.29.2020 10:02	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	08.29.2020 10:02	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	08.29.2020 10:02	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	08.29.2020 10:02	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	08.29.2020 10:02	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	08.29.2020 10:02	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	08.29.2020 10:02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	4	160-00-4	104	%	70-130	08.29.2020 10:02		
1,4-Difluorobenzene	5	540-36-3	101	%	70-130	08.29.2020 10:02		



## **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.

**BRL** Below Reporting Limit. **ND** Not Detected.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

E300P

E300P

Prep Method:

#### **QC Summary** 671316

### WSP USA RDX 17-25

Analytical Method: Inorganic Anions by EPA 300 Prep Method: Seq Number: 3135891 Matrix: Solid

Date Prep: 08.28.2020 7710431-1-BLK LCS Sample Id: 7710431-1-BKS LCSD Sample Id: 7710431-1-BSD MB Sample Id:

RPD MB Spike LCS LCS Limits %RPD Units Analysis LCSD LCSD Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 105 90-110 20 08.28.2020 18:31 263 266 106 1 mg/kg

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P Seq Number: 3135892 Matrix: Solid Date Prep: 08.28.2020

7710432-1-BLK LCS Sample Id: 7710432-1-BKS LCSD Sample Id: 7710432-1-BSD MB Sample Id:

MB Spike LCS LCS LCSD LCSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec %Rec Limit Date Result 08.28.2020 21:36 Chloride <10.0 250 263 105 266 106 90-110 1 20 mg/kg

Analytical Method: Inorganic Anions by EPA 300

3135891 Seq Number: Matrix: Soil Date Prep: 08.28.2020 MS Sample Id: 671316-004 S MSD Sample Id: 671316-004 SD Parent Sample Id: 671316-004

Spike **RPD Parent** MS MS %RPD Units MSD **MSD** Limits Analysis Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 6480 20 08.28.2020 20:06 200 6690 105 6690 104 90-110 0 mg/kg

Analytical Method: Inorganic Anions by EPA 300

E300P Prep Method: 3135892 Matrix: Soil 08.28.2020 Seq Number: Date Prep: Parent Sample Id: 671316-014 MS Sample Id: 671316-014 S MSD Sample Id: 671316-014 SD

RPD Parent Spike MS MS MSD **MSD** Limits %RPD Units Analysis Flag **Parameter** Result Limit Date Result Amount %Rec %Rec Result 08.28.2020 21:52 20 Chloride <9 94 199 205 103 205 103 90-110 0 mg/kg

**Analytical Method: Inorganic Anions by EPA 300** 

E300P Prep Method: 3135892 Seq Number: Matrix: Soil Date Prep: 08.28.2020 Parent Sample Id: 671325-004 MS Sample Id: 671325-004 S MSD Sample Id: 671325-004 SD

Parent Spike MS MS Limits %RPD RPD Units Analysis MSD MSD Flag **Parameter** Result Limit Date Result Amount %Rec Result %Rec 08.28.2020 23:10 Chloride 156 199 353 99 350 97 90-110 1 20 mg/kg

Analytical Method: Inorganic Anions by EPA 300

E300P Prep Method: 3135891 Seq Number: Matrix: Soil Date Prep: 08.28.2020

MS Sample Id: 671257-012 S Parent Sample Id: 671257-012

Spike MS MS Parent Limits Units Analysis Flag **Parameter** Result Amount Result %Rec Date

08.28.2020 18:48 90-110 mg/kg Chloride 245 201 447 100

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample = Parent Result = MS/LCS Result = MSD/LCSD Result

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

Flag

Flag

#### **QC Summary** 671316

## WSP USA RDX 17-25

Analytical Method: TPH by SW8015 Mod SW8015P Prep Method: Seq Number: 3135936 Matrix: Solid Date Prep: 08.28.2020

LCS Sample Id: 7710466-1-BKS LCSD Sample Id: 7710466-1-BSD MB Sample Id: 7710466-1-BLK

RPD MB Spike LCS LCS Limits %RPD Units Analysis LCSD LCSD **Parameter** Result Amount Result %Rec %Rec Limit Date Result Gasoline Range Hydrocarbons (GRO) 1080 108 35 08.28.2020 17:48 < 50.0 1000 1040 104 70-135 4 mg/kg 08.28.2020 17:48 Diesel Range Organics (DRO) 1000 871 87 824 70-135 6 35 mg/kg < 50.0 82

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec Flag Flag Date %Rec %Rec 08.28.2020 17:48 1-Chlorooctane 102 129 117 70-135 % 08.28.2020 17:48 o-Terphenyl 80 95 86 70-135 %

SW8015P Analytical Method: TPH by SW8015 Mod Prep Method:

3135945 Seq Number: Matrix: Solid Date Prep: 08.28.2020 LCS Sample Id: 7710492-1-BKS LCSD Sample Id: 7710492-1-BSD MB Sample Id: 7710492-1-BLK

MB Spike LCS LCS LCSD Limits %RPD **RPD** Units Analysis LCSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date 08.28.2020 23:52 Gasoline Range Hydrocarbons (GRO) 98 < 50.0 1000 975 945 3 35 95 70-135 mg/kg 08.28.2020 23:52 Diesel Range Organics (DRO) < 50.0 1000 1080 108 1060 106 70-135 2 35 mg/kg

MB MB LCS LCS LCSD Limits Units LCSD Analysis Surrogate %Rec Date %Rec Flag Flag %Rec Flag 08.28.2020 23:52 1-Chlorooctane 120 133 129 70-135 % 08.28.2020 23:52 o-Terphenyl 126 130 125 70-135 %

SW8015P Analytical Method: TPH by SW8015 Mod Prep Method:

Seq Number: 3135936 Matrix: Solid Date Prep: 08.28.2020

MB Sample Id: 7710466-1-BLK

MB Units Analysis Flag **Parameter** Result Date Motor Oil Range Hydrocarbons (MRO) 08.28.2020 17:28 < 50.0 mg/kg

SW8015P Analytical Method: TPH by SW8015 Mod Prep Method:

3135945 Seq Number: Matrix: Solid Date Prep: 08.28.2020

MB Sample Id: 7710492-1-BLK

MB Units Analysis Flag **Parameter** Result Date 08.28.2020 23:32

Motor Oil Range Hydrocarbons (MRO) < 50.0 mg/kg

Flag

Flag

Flag

## QC Summary 671316

## WSP USA RDX 17-25

 Analytical Method:
 TPH by SW8015 Mod
 Prep Method:
 SW8015P

 Seq Number:
 3135936
 Matrix:
 Soil
 Date Prep:
 08.28.2020

 Parent Sample Id:
 671316-015
 MS Sample Id:
 671316-015 SD
 MSD Sample Id:
 671316-015 SD

RPD **Parent** Spike MS MS Limits %RPD Units Analysis MSD MSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date Gasoline Range Hydrocarbons (GRO) <49.8 995 1060 107 35 08.28.2020 18:49 1200 70-135 12 120 mg/kg 08.28.2020 18:49 2 mg/kg Diesel Range Organics (DRO) <49.8 995 863 87 70-135 35 847 85

MS MS **MSD** Limits Units Analysis MSD **Surrogate** %Rec Flag Flag Date %Rec \*\* 08.28.2020 18:49 1-Chlorooctane 138 \*\* 138 70-135 % 08.28.2020 18:49 o-Terphenyl 106 111 70-135 %

Analytical Method:TPH by SW8015 ModPrep Method:SW8015PSeq Number:3135945Matrix:SoilDate Prep:08.28.2020

Parent Sample Id: 671309-001 MS Sample Id: 671309-001 S Date Prep: 08.28.2020 MSD Sample Id: 671309-001 SD

Parent Spike MS MS MSD Limits %RPD **RPD** Units Analysis MSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date 08.29.2020 00:52 Gasoline Range Hydrocarbons (GRO) < 50.2 842 1000 84 790 79 70-135 35 6 mg/kg 08.29.2020 00:52 Diesel Range Organics (DRO) < 50.2 1000 769 77 738 74 70-135 4 35 mg/kg

MS MS MSD Limits Units MSD Analysis **Surrogate** Date %Rec Flag %Rec Flag 08.29.2020 00:52 1-Chlorooctane 111 103 70-135 % o-Terphenyl 08.29.2020 00:52 104 103 70-135 %

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

 Seq Number:
 3135888
 Matrix:
 Solid
 Date Prep:
 08.28.2020

 MB Sample Id:
 7710427-1-BLK
 LCS Sample Id:
 7710427-1-BKS
 LCSD Sample Id:
 7710427-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	I
Benzene	< 0.00200	0.100	0.100	100	0.105	105	70-130	5	35	mg/kg	08.28.2020 18:47	
Toluene	< 0.00200	0.100	0.0951	95	0.0987	99	70-130	4	35	mg/kg	08.28.2020 18:47	
Ethylbenzene	< 0.00200	0.100	0.0996	100	0.104	104	71-129	4	35	mg/kg	08.28.2020 18:47	
m,p-Xylenes	< 0.00400	0.200	0.202	101	0.212	106	70-135	5	35	mg/kg	08.28.2020 18:47	
o-Xylene	< 0.00200	0.100	0.102	102	0.105	105	71-133	3	35	mg/kg	08.28.2020 18:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		96		101		70-130	%	08.28.2020 18:47
4-Bromofluorobenzene	103		99		100		70-130	%	08.28.2020 18:47

#### **QC Summary** 671316

## WSP USA RDX 17-25

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method: Seq Number: 3135889 Matrix: Solid Date Prep: 08.28.2020 LCS Sample Id: 7710428-1-BKS MB Sample Id: 7710428-1-BLK LCSD Sample Id: 7710428-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.0955	96	0.101	101	70-130	6	35	mg/kg	08.29.2020 06:03	
Toluene	< 0.00200	0.100	0.0901	90	0.0963	96	70-130	7	35	mg/kg	08.29.2020 06:03	
Ethylbenzene	< 0.00200	0.100	0.0920	92	0.0980	98	71-129	6	35	mg/kg	08.29.2020 06:03	
m,p-Xylenes	< 0.00400	0.200	0.186	93	0.197	99	70-135	6	35	mg/kg	08.29.2020 06:03	
o-Xylene	< 0.00200	0.100	0.0944	94	0.101	101	71-133	7	35	mg/kg	08.29.2020 06:03	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene	101		10	00		100	)	70	-130	%	08.29.2020 06:03	
4-Bromofluorobenzene	107		10	01		99		70	-130	%	08.29.2020 06:03	

Analytical Method: BTEX by EPA 8021B Prep Method:

Seq Number: 3135888 Matrix: Soil Date Prep: 08.28.2020 MS Sample Id: 671257-012 S MSD Sample Id: 671257-012 SD Parent Sample Id: 671257-012

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00201	0.101	0.0919	91	0.101	101	70-130	9	35	mg/kg	08.28.2020 19:48
Toluene	< 0.00201	0.101	0.0866	86	0.0954	95	70-130	10	35	mg/kg	08.28.2020 19:48
Ethylbenzene	< 0.00201	0.101	0.0913	90	0.0987	99	71-129	8	35	mg/kg	08.28.2020 19:48
m,p-Xylenes	< 0.00402	0.201	0.185	92	0.204	101	70-135	10	35	mg/kg	08.28.2020 19:48
o-Xylene	< 0.00201	0.101	0.0892	88	0.0991	99	71-133	11	35	mg/kg	08.28.2020 19:48

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		95		70-130	%	08.28.2020 19:48
4-Bromofluorobenzene	97		102		70-130	%	08.28.2020 19:48

Prep Method: SW5035A Analytical Method: BTEX by EPA 8021B Seq Number: 3135889 Matrix: Soil Date Prep: 08.28.2020

MS Sample Id: 671316-014 S MSD Sample Id: 671316-014 SD Parent Sample Id: 671316-014

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00198	0.0990	0.0971	98	0.0891	90	70-130	9	35	mg/kg	08.29.2020 10:22
Toluene	< 0.00198	0.0990	0.0925	93	0.0823	83	70-130	12	35	mg/kg	08.29.2020 10:22
Ethylbenzene	< 0.00198	0.0990	0.0941	95	0.0821	83	71-129	14	35	mg/kg	08.29.2020 10:22
m,p-Xylenes	< 0.00396	0.198	0.190	96	0.165	83	70-135	14	35	mg/kg	08.29.2020 10:22
o-Xylene	< 0.00198	0.0990	0.0967	98	0.0807	81	71-133	18	35	mg/kg	08.29.2020 10:22

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		103		70-130	%	08.29.2020 10:22
4-Bromofluorobenzene	97		100		70-130	%	08.29.2020 10:22

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

[D] = 100\*(C-A) / BRPD = 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

SW5035A

Flag

Flag

# Chain of Custody

Work Order No: (971316

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Crasibad, NM (432) 704-5440 Consideration of the control 
	Course Byers	Relinquished by: (Signature)	of Xenco. A minimum charge of \$75.00 will be app	Notice: Signature of this document and relinquishment of samples of	Total 200.7 / 6010 200.8 / 6020:	Ш	PHO VA	PHØ3	PHOLB	PH\$2A	PHAZ	PHØIC	PHY B	PHO1 A	PHOI	ID campia identification	Sample Identification		Ύe	6	Temperature (°C): 1. O	SAMPLE RECEIPT TO		Sampler's Name: Anna B	Project Location Eddy County	Project Number: Ø3482Ø01Ø	_	$\neg$				7	Project Manager: TOSPO
	Clos Catton	Received by: (Signature)	of samples and shall not assume any respondied to each project and a charge of \$5 for	hment of samples constitutes a valid purch		4 116		4491	1023	18/5	1005	1229	Ø954	\$939	S 8/17/14 pg19	Matrix Sampled Sampled	Date		N/A Cor	No	Ther	Temp Blank: Yes No Wet	Quote #:				17-25	641	CA+14 VI YOU	A STATE OF THE PROPERTY OF THE	- And Canada And	To Tienco	Hornand.
	80:H 88:3	iture) Date/Time	nsibility for any losses or expenses incurred reach sample submitted to Xenco, but not an	a valid purchase order from client company to Xenco, its affiliates and subse	13PPM Texas 11 Al Sb As	3' 1/	2' 1/	1,				-		9 2'	-	Depth Num	ber	of C	Cont	aine	ers			ate:		Routine Pres.	Turn Around	Email: Obyers @ Henvicon	City, State ZIP: Cor	Address: 5315	Company Name: WPX	Bill to: (if different) Lunda	) 335-0900 Atlanta,GA (770) 449-8800 T
6 4	2	Relinquished by: (Signature)	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.	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenocal its affiliates and subcontact.	Ca Cr Co Cu Fe											Ch						_	_	_	6)		ANALYSIS REQUEST			buena Vista Dr.	Energy	da Laumback	170) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
	Received by: (Signature)		and conditions rond the control egotiated,	N Se Ag SIOZ Na													3	TAT	Zn /	Nac	HCI	H28	HN	Nor	Me	0.00		Deliverables: EDD ADaPT	Reporting:Level II	State of Project:	Program: UST/PST PRP Brownfields PBC S		689-6701 <u>www.xenco.com</u>
	Date/Time			Sr II Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg											Sample Comments	Comple	received by 4:00pm	chain the decision of the deci	Zn Acetate+ NaOH: Zn	NaOH: Na	HCL: HL	H2S04: H2	HNO3: HN	None: NO	МеОН: Ме	Preservative Codes		Other:	ST TRRP TI evel IV	elus   KKC   Superfund	ALLAN DECT C		Page 1 of 2

Revised Date 022619 Rev. 2019,1

Page 92 of 189

Joseph Hernandez

Project Manager: Company Name:

3380 North

A Street

LT Environmental

# Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Chain of Custody

Work Order No: 6713116

Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296 Crasibad, NM (432) 704-5440

Company Name: WPX Energy

Address: 5315 Buena Vista

0

State of Project:

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

Work Order Comments

www.xenco.com

Page

P

of, 2

Bill to: (if different

Lynda

Laumbach

Project Name:				0 4							0
Project Name:   Child Name:						Š	3	1	0	8	Une Bye
Project Name:	Date/Ti	Received by: (Signature)			Date/Tim		/: (Signature)	Received by		jnature)	Relinquished by: (Sig
Project Name:   ROX   17 25   Tum Around   Project Name:   ROX   17 25   Routine   Rox   Rox   Routine   Rox   Routine   Rox		ditions s control ad.	ntractors. It assigns standard terms and con losses are due to circumstances beyond the will be enforced unless previously negotiate	s affiliates and subco ed by the client if such analyzed. These terms	any to Xenco, its xpenses incurre Xenco, but not a	or from client composite for any losses or emple submitted to	valid purchase orde e any responsibility rge of \$5 for each sa	les constitutes a I shall not assum project and a cha	nment of samples and plied to each	only for the cost of \$75.00 will be ap	of Xenco. A minimum charge of
Project Name:   ROX   13 - 25   Enable   Day   Cox   Project Name:   ROX   13 - 25   Routine   ROX	5.1 / 7470 / 747		Cu Pb Mn Mo Ni Se Ag TI U	Be Cd Cr Co	Sb As Ba	10: 8RCRA	CLP / SPLP 60	zed I	to be analy	and Metal(s)	Circle Method(s)
Project Name:   Phone   4/32 - 3/44   2/4/2   1/4   2/4   1/4	in U V Zn	K Se Ag SiO2 Na Sr	Cr Co Cu Fe Pb Mg	Cd	Al Sb As	PM Texas 11	8RCRA 13P		020:	0 200.8/6	Total 200.7 / 6010
Project Name:   Project Nam					-	1			4		MARCO B
Project Name:   4/32 - 5/41   5/41     Email:   Obdycs   HeOving Level						`	-				PHOLA A
Project Name:   432 - 594 - 564						1 2	1637				PHOGE
Project Name:				_							PHPS 13
Phone:											PHØS A
Project Name:						1, 1	8 5				PHTES
Project Name:						1, 1	1444				PHP4B
Project Name:						2' 1	1438				PHTOU A
Project Name:   Project Nam						( -	1433				PHPY
Project Name: RDX 17-25  Project Number: C342 SQ44 - 5541						4' 1	1122	8/27/20	v		PHT/3C
City, State ZIP:   Coc/15 b Cct, N/M 8822 c/2   Reporting:   Level          PS	Sample Comm			1/21	TPI		Time Sampled	Date Sampled	Matrix	ication	-ab Sample Identifi
Temp Blank   Yes No No No No Correction Factor: -0.2   City, State ZIP:   Co./155 C.d., N/M 8822   Co./155 C.d., N/M 88	received by 4:00				4 (	er of	Containers:	Total		Yes	Sample Custody Se
RDX 17-25  RDX 17-25  RDX 17-25  Turn Around  Pres.  Pana Buecs  Rush:  Due Date:  Temp Blank: Yes No  Wet Ice: Yes No  Thermometer ID  Thermometer ID  Table Code  Thermometer ID  Thermomete		TATA			E	v	tion Factor:	Correc		Yes	Cooler Custody Se
City, State ZIP:   Contsbook   N/M 88220	state+ NaOH: Zn	Zn Ac			PA	ntai	F00-12	7	No		Received Int
RDX 17-25  RDX 17-25  Turn Around  Pres.  Pana Byers  Quote #:  Temp Blank: (Vas. No Wet Ice: Obs No & & & & & & & & & & & & & & & & & &		NO.			8		hermometer ID	T	0	0	Temperature (
RDX 17-25  RDX 17-25  ROUTH ROUTH  Pres.  PAnna Byers  Quote #: Due Date:  Due Date:  City, State ZIP: Coc1850cd, N/M 88220  ANALYSIS REQUE  ANALYSIS REQUE  ANALYSIS REQUE  One State ZIP: Coc1850cd, N/M 88220  ANALYSIS REQUE  ANALYSIS REQUE  One State ZIP: Coc1850cd, N/M 88220  ANALYSIS REQUE  ON	<b>±</b>	HCI:			ØI	No		CYAS No	mp Blank:		SAMPLE RECEIPT
RDX 17-25  RDX 17-25  Routine M code  Feet.  Bana Byers  Due Date:	#: H2	H2S0						Quote #:	18	1	PO#:
1914   Email: Obyes @ Henv. Com.	TZ (	HNOS					Due Date		byers		
132 - 894 - 5641   Email: Obyers@ Henv. Com   RDX 17 - 25   Turn Around   Pres.   ANALYSIS REQUIRED   Pres.   Comb   Pres.	O	None		5)			Rush:	_	ount	100	_
1 - 5641 Email: Obyers@ Henv. Com  Turn Around ANALYSIS REQUE	: Me	MeOH			de es.		Routine		0010	Ø3482	Project Number:
1-5641 Email: Obyers@ Henv. Com	Preservative (		ANALYSIS REQUEST				Turn		-25		
City, State ZIP:   Conspan, N/M 68220	Other:			COM				149	9H - 5	11	
	UTRRP U Lev	orting:Level II Level III PST/UST	88220		IP: Carl	City, State Z		SOT PL	C IX	Midian	City, State ZIP:

eurofins Environment Testing

# **Certificate of Analysis Summary 676679**

LT Environmental, Inc., Arvada, CO

**Project Name: RDX 17-25** 

**Project Id:** 

034820010

**Date Received in Lab:** Mon 11.02.2020 15:50

**Contact:** 

Joseph Hernandez

**Report Date:** 11.05.2020 08:10

**Project Location:** 

NM

Project Manager: Jessica Kramer

	Lab Id:	676679-001			
Analysis Requested	Field Id:	CH01@1.5-2'			
muysis Requesicu	Depth:	1.5-2 ft			
	Matrix:	SOIL			
	Sampled:	10.29.2020 10:00			
BTEX by EPA 8021B	Extracted:	11.03.2020 09:30			
	Analyzed:	11.03.2020 16:09			
	Units/RL:	mg/kg RL			
Benzene	'	< 0.00201 0.00201			
Toluene		< 0.00201 0.00201			
Ethylbenzene		< 0.00201 0.00201			
m,p-Xylenes		< 0.00402 0.00402			
o-Xylene		< 0.00201 0.00201			
Total Xylenes		<0.00201 0.00201			
Total BTEX		<0.00201 0.00201			
Chloride by EPA 300	Extracted:	11.02.2020 16:33			
	Analyzed:	11.02.2020 20:22			
	Units/RL:	mg/kg RL			
Chloride		344 9.96			
TPH by SW8015 Mod	Extracted:	11.02.2020 16:30			
	Analyzed:	11.03.2020 01:59			
	Units/RL:	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1			
Diesel Range Organics (DRO)		79.6 50.1			
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1			
Total TPH		79.6 50.1			
10141 1111		77.0 30.1			

BRL - Below Reporting Limit

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

Jessica Weamer



# **Analytical Report 676679**

for

## LT Environmental, Inc.

Project Manager: Joseph Hernandez

RDX 17-25 034820010 11.05.2020

Collected By: Client

## 1089 N Canal Street Carlsbad, NM 88220

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

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

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



11.05.2020

Project Manager: Joseph Hernandez

LT Environmental, Inc. 4600 W. 60th Avenue Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): 676679

**RDX 17-25** 

Project Address: NM

#### Joseph Hernandez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 676679. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 676679 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

# **Sample Cross Reference 676679**

LT Environmental, Inc., Arvada, CO

RDX 17-25

 Sample Id
 Matrix
 Date Collected
 Sample Depth
 Lab Sample Id

 CH01@1.5-2'
 S
 10.29.2020 10:00
 1.5 - 2 ft
 676679-001

Xenco

**Environment Testing** 

## **CASE NARRATIVE**

Page 97 of 189

Client Name: LT Environmental, Inc.

Project Name: RDX 17-25

Project ID: Report Date: 11.05.2020 034820010 Work Order Number(s): 676679 Date Received: 11.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Xenco

## **Certificate of Analytical Results 676679**

## LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH01@1.5-2' Matrix: Soil Date Received:11.02.2020 15:50

Lab Sample Id: 676679-001

Date Collected: 10.29.2020 10:00

Sample Depth: 1.5 - 2 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

MAB Tech:

Seq Number: 3141207

Analyst:

Tech:

MAB

Date Prep: 11.02.2020 16:33 % Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	344	9.96	mg/kg	11.02.2020 20:22		1

Analytical Method: TPH by SW8015 Mod

MAB

CACAnalyst: Seq Number: 3141201

Date Prep: 11.02.2020 16:30 % Moisture:

Prep Method: SW8015P

Basis:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.1	50.1		mg/kg	11.03.2020 01:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	79.6	50.1		mg/kg	11.03.2020 01:59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	11.03.2020 01:59	U	1
Total TPH	PHC635	79.6	50.1		mg/kg	11.03.2020 01:59		1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	127	%	70-135	11.03.2020 01:59
o-Terphenyl	84-15-1	124	%	70-135	11.03.2020 01:59

Wet Weight

Flag

## **Certificate of Analytical Results 676679**

## LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH01@1.5-2' Matrix: Soil Date Received:11.02.2020 15:50

Lab Sample Id: 676679-001 Date Collected: 10.29.2020 10:00 Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Seq Number: 3141311

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201	mg/kg	11.03.2020 16:09	U	1
Toluene	108-88-3	< 0.00201	0.00201	mg/kg	11.03.2020 16:09	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201	mg/kg	11.03.2020 16:09	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402	mg/kg	11.03.2020 16:09	U	1
o-Xylene	95-47-6	< 0.00201	0.00201	mg/kg	11.03.2020 16:09	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201	mg/kg	11.03.2020 16:09	U	1
Total BTEX		< 0.00201	0.00201	mg/kg	11.03.2020 16:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	]
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.03.2020 16:09	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.03.2020 16:09	



## **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.

**BRL** Below Reporting Limit. **ND** Not Detected.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

#### **QC Summary** 676679

#### LT Environmental, Inc.

RDX 17-25

252

676514-005 S

Analytical Method: Chloride by EPA 300

Seq Number: 3141207

7714384-1-BLK

Matrix: Solid

101

E300P Prep Method:

Date Prep: 11.02.2020

7714384-1-BSD

LCS MB Spike **Parameter** Amount

LCS Sample Id: 7714384-1-BKS LCSD Sample Id: RPD

mg/kg

Chloride

MB Sample Id:

Result <10.0 Result 253

250

Amount

199

LCS LCSD %Rec Result

Limits LCSD %Rec 101

90-110

%RPD 0

Units

Analysis Flag Date

Analytical Method: Chloride by EPA 300

Seq Number:

3141207 676514-005 Matrix: Soil

MS Sample Id:

Prep Method: Date Prep:

RPD

Limit

20

Limit

20

E300P

11.02.2020 MSD Sample Id: 676514-005 SD

**Parameter** 

Chloride

Parent Sample Id:

Parent Result

Spike MS Result 3900

MS MSD %Rec Result 106 3880

MSD %Rec 95

Limits %RPD 90-110 1

Units

mg/kg

Analysis Flag Date

11.02.2020 19:11

11.02.2020 18:55

Analytical Method: Chloride by EPA 300

3141207

Matrix: Soil MS Sample Id: 676679-001 S Prep Method: Date Prep:

**RPD** 

Limit

20

E300P

11.02.2020 MSD Sample Id: 676679-001 SD

**Parameter** 

Chloride

Parent Sample Id:

Seq Number:

676679-001

Spike **Parent** Result Amount 344 200

3690

MS MS Result %Rec 530 93

MSD Result 542

**MSD** Limits %Rec 99 90-110

%RPD 2

Units mg/kg Analysis Flag Date

11.02.2020 20:28

Analytical Method: TPH by SW8015 Mod Seq Number:

MB Sample Id:

3141201

7714382-1-BLK LCS Sample Id:

Matrix: Solid

7714382-1-BKS

Prep Method: Date Prep:

SW8015P 11.02.2020

LCSD Sample Id: 7714382-1-BSD

MB Spike LCS LCS LCSD LCSD Limits %RPD **RPD** Units Analysis **Parameter** Result Limit Date Result Amount %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) 11.02.2020 18:36 91 35 < 50.0 1000 907 852 85 70-135 6 mg/kg 11.02.2020 18:36 Diesel Range Organics (DRO) 1040 104 1000 70-135 35 < 50.0 1000 100 4 mg/kg

LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec %Rec Flag Date Flag %Rec 11.02.2020 18:36 1-Chlorooctane 95 125 105 70-135 % 11.02.2020 18:36 o-Terphenyl 101 103 101 70-135 %

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141201

Motor Oil Range Hydrocarbons (MRO)

Matrix: Solid

MB Sample Id: 7714382-1-BLK

Prep Method:

SW8015P

Date Prep: 11.02.2020

mg/kg

**Parameter** 

MBResult

< 50.0

Units

Analysis Date

Flag 11.02.2020 18:16

Flag

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

Log Difference

[D] = 100\*(C-A) / B $RPD = 200* \mid (C-E) \mid (C+E) \mid$ [D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

Flag

Flag

Date

Limit

Result

Amount

**Parameter** 

#### **QC Summary** 676679

#### LT Environmental, Inc.

RDX 17-25

SW8015P Analytical Method: TPH by SW8015 Mod Prep Method: Seq Number: 3141201 Matrix: Soil Date Prep: 11.02.2020

%Rec

Result

Parent Sample Id: 676514-007 MS Sample Id: 676514-007 S MSD Sample Id: 676514-007 SD RPD **Parent** Spike MS MS Limits %RPD Units Analysis MSD MSD

Result %Rec Gasoline Range Hydrocarbons (GRO) < 50.2 1000 837 84 0 35 11.02.2020 19:37 838 84 70-135 mg/kg 11.02.2020 19:37 mg/kg Diesel Range Organics (DRO) < 50.2 1000 910 91 927 93 70-135 2 35

**MSD** Limits Units MS MS Analysis MSD **Surrogate** %Rec Flag Flag Date %Rec 11.02.2020 19:37 1-Chlorooctane 129 133 70-135 % 11.02.2020 19:37 o-Terphenyl 118 123 70-135 %

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method: 3141311 Matrix: Solid

Seq Number: Date Prep: 11.03.2020 LCS Sample Id: 7714461-1-BKS LCSD Sample Id: 7714461-1-BSD MB Sample Id: 7714461-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	11.03.2020 09:56
Toluene	< 0.00200	0.100	0.0955	96	0.101	101	70-130	6	35	mg/kg	11.03.2020 09:56
Ethylbenzene	< 0.00200	0.100	0.0976	98	0.102	102	71-129	4	35	mg/kg	11.03.2020 09:56
m,p-Xylenes	< 0.00400	0.200	0.197	99	0.205	103	70-135	4	35	mg/kg	11.03.2020 09:56
o-Xylene	< 0.00200	0.100	0.0967	97	0.102	102	71-133	5	35	mg/kg	11.03.2020 09:56

MBMB LCS LCS LCSD Limits Units Analysis LCSD Surrogate %Rec Flag %Rec Flag Flag Date %Rec 11.03.2020 09:56 1,4-Difluorobenzene 104 99 104 70-130 % 11.03.2020 09:56 4-Bromofluorobenzene 103 70-130 % 110 110

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method: Seq Number: 3141311 Matrix: Soil Date Prep: 11.03.2020

Parent Sample Id: 676514-007 MS Sample Id: 676514-007 S MSD Sample Id: 676514-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.101	0.107	106	0.0886	89	70-130	19	35	mg/kg	11.03.2020 10:41	
Toluene	< 0.00201	0.101	0.0986	98	0.0879	88	70-130	11	35	mg/kg	11.03.2020 10:41	
Ethylbenzene	< 0.00201	0.101	0.0998	99	0.0910	91	71-129	9	35	mg/kg	11.03.2020 10:41	
m,p-Xylenes	< 0.00402	0.201	0.202	100	0.186	93	70-135	8	35	mg/kg	11.03.2020 10:41	
o-Xylene	< 0.00201	0.101	0.102	101	0.0943	94	71-133	8	35	mg/kg	11.03.2020 10:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		101		70-130	%	11.03.2020 10:41
4-Bromofluorobenzene	107		117		70-130	%	11.03.2020 10:41

E = MSD/LCSD Result

C	-	1
-	4	٥
(	2	1
11.00	0	1
	-	1
	_	(

LABOR	BORATORIES		Houston,TX Midland,TX	(281) 240-4200 [ (432-704-5440)	Dallas,TX (214) 902-030 EL Paso,TX (915)585-	Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334 Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296		Dage	- 2 
	losenh Hernandez	HODD	S,NM (5/5-392-/55	Bill to: (if different)	Lynda Laumbach	HODDS,NM (3/3-382-4/30U) Frideling,Az (400-3003-080U) Anania,Oz (7/0-449-000U) Tambat L (600-020-000U)  Bill to: (if different) Lynda Laumbach		Work Order Comments	
Company Name: LT E	LT Environmental, Inc	ic.	Con	Company Name:	WPX Energy		Program: UST/PST   RF	□RP □rownfields F□C	¶perfund ☐
	3300 North A Street		Add	Address:	5315 Buena Vista Dr	)r			
te ZIP:	Midland, TX 79705		City	City, State ZIP:	Carlsbad, NM 88220	Ö	Reporting:Level III		LLeIV
	281-702-2329		Email: jher	mandez@ltenv	Email: hernandez@ltenv.com & abyers@ltenv.com	env.com	Deliverables: EDD	ADaPT O	Other:
Name:	RDX 17-25		Turn Around	round		ANALYSIS REQUEST	UEST	Work	Work Order Notes
ň	034820010		Routine	Ø					
	er		Rush:						
me:	Anna Byers		Due Date						
SAMPLE RECEIPT	Temp Blank:	ınk: (Yes) No	Wet Ice: Yes	No No					
Temperature (°C):	(-2	(	Thermometer ID						
Received Intact:	YOR NO	+	TUNIO07	onta	21B)				
Cooler Custody Seals:	Yes No NA		Total Containers:		PA 80			lab, if re	lab, if received by 4:30pm
Sample Identification	ation Matrix	Date rix Sampled	Time I	Depth Number	TPH (EF			Samp	Sample Comments
CHOI @ 1.5	5-2' S	16/20/20	1000 1.5-	2,	×				
					>				
			1	1					
					\$				
Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	200.8 / 6020:	_	8RCRA 13PPM Texas 11 /	1 Texas 11 /	N Sb As Ba Be	Cd Ca Cr Co C	tu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na In Mo Ni Se Ag TI U 163*	g SiO2 Na Sr Ti Sn 1631 / 245.1 /	Na Sr TI Sn U V Zn 1631/245.1/7470/7471:Hg
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractor 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 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	ment and relinquishment only for the cost of sa	nt of samples consti mples and shall not d to each project and	tutes a valid purchas assume any respons d a charge of \$5 for e	se order from client sibility for any loss each sample submit	company to Xenco, its a es or expenses incurred ited to Xenco, but not an	iffiliates and subcontractors. It assign by the client if such losses are due to alyzed. These terms will be enforced u	s. It assigns standard terms and conditions are due to circumstances beyond the control enforced unless previously negotiated.		
Relinquished by: (Signature)	ignature)	Received	Received by: (Signature)		Date/Time	Relinquished by: (Signature)	ature) Received by	Received by: (Signature)	Date/Time
Chune By	- Jan	2	1		11/1/20 19:50	. 2			

## **Eurofins Xenco, LLC**

## Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.02.2020 03.50.00 PM

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

Work Order #: 676679

Analyst:

Temperature Measuring device used: T NM 007

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		1	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	iner/ 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 relinquish	ned/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated	test(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		N/A	
#18 Water VOC samples have zero headsp	pace?	N/A	

* Must be completed for after-hours deliver	v of samp	oles prior to	placing in the	he refrigerator
made be completed for ditor medic deliver	<i>,</i> 0. 0ap	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	p.aog t.	

Checklist completed by:	Ulas Martha Castro	Date: <u>11.02.2020</u>
Checklist reviewed by:	Jessica Vermer	Date: 11.03.2020

Jessica Kramer

PH Device/Lot#:

eurofins Environment Testing

# **Certificate of Analysis Summary 676680**

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-25

Project Id:

034820010

**Date Received in Lab:** Mon 11.02.2020 15:50

Contact: Joseph Hernandez

**Report Date:** 01.13.2021 16:20

**Project Location:** 

Project Manager: Jessica Kramer

			T	ı	1	1	
Analysis Requested	Lab Id:	676680-001					
	Field Id:	CH01 @3.5-4'					
	Depth:	3.5-4 ft					
	Matrix:	SOIL					
	Sampled:	10.29.2020 10:52					
BTEX by EPA 8021B	Extracted:	11.03.2020 09:30					
	Analyzed:	11.03.2020 16:32					
	Units/RL:	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		< 0.00200 0.00200					
Ethylbenzene		< 0.00200 0.00200					
m,p-Xylenes		<0.00400 0.00400					
o-Xylene		< 0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
Chloride by EPA 300	Extracted:	11.02.2020 16:33					
	Analyzed:	11.02.2020 20:39					
	Units/RL:	mg/kg RL					
Chloride		3230 49.9					
TPH by SW8015 Mod	Extracted:	11.02.2020 16:30					
	Analyzed:	11.03.2020 02:18					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<13.9 50.1					
Diesel Range Organics (DRO)		16.3 J 50.1					_
Motor Oil Range Hydrocarbons (MRO)		<11.5 50.1					
Total TPH		16.3 J 50.1					
						<u></u>	

BRL - Below Reporting Limit

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

Jessica Kramer



# **Analytical Report 676680**

for

## LT Environmental, Inc.

Project Manager: Joseph Hernandez

RDX 17-25 034820010 01.13.2021

Collected By: Client

## 1089 N Canal Street Carlsbad, NM 88220

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8) Xenco-Tampa: Florida (E87429), North Carolina (483)



01.13.2021

Project Manager: Joseph Hernandez LT Environmental, Inc. 4600 W. 60th Avenue Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): 676680

RDX 17-25
Project Address:

#### **Joseph Hernandez**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 676680. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 676680 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

# **Sample Cross Reference 676680**

LT Environmental, Inc., Arvada, CO

RDX 17-25

 Sample Id
 Matrix
 Date Collected
 Sample Depth
 Lab Sample Id

 CH01 @3.5-4'
 S
 10.29.2020 10:52
 3.5 - 4 ft
 676680-001

#### Page 109 of 189

#### **CASE NARRATIVE**

eurofins Environment Testing Xenco

Client Name: LT Environmental, Inc.

Project Name: RDX 17-25

 Project ID:
 034820010
 Report Date:
 01.13.2021

 Work Order Number(s):
 676680
 Date Received:
 11.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

#### Certificate of Analytical Results 676680

#### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: **CH01** @**3.5-4**'

Matrix: Soil

Date Received:11.02.2020 15:50

Lab Sample Id: 676680-001

Date Collected: 10.29.2020 10:52

11.02.2020 16:33

Sample Depth: 3.5 - 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

Tech: MAB

B Date Prep:

% Moisture:

Analyst: MAB

Basis: Wet Weight

Seq Number: 3141207

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3230	49.9	mg/kg	11.02.2020 20:39		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

MAB

Analyst: CAC Seq Number: 3141201 Date Prep: 11.02.2020 16:30

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.1		mg/kg	11.03.2020 02:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	16.3	50.1		mg/kg	11.03.2020 02:18	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.1		mg/kg	11.03.2020 02:18	U	1
Total TPH	PHC635	16.3	50.1		mg/kg	11.03.2020 02:18	J	1
Surrogate	•	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	125	%	70-135	11.03.2020 02:18
o-Terphenyl	84-15-1	125	%	70-135	11.03.2020 02:18

Wet Weight

## **Certificate of Analytical Results 676680**

#### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH01 @3.5-4' Matrix: Soil Date Received:11.02.2020 15:50

Lab Sample Id: 676680-001 Date Collected: 10.29.2020 10:52 Sample Depth: 3.5 - 4 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

% Moisture: MAB Analyst: Date Prep: 11.03.2020 09:30 Basis:

Seq Number: 3141311

Parameter	Cas Number	r Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	11.03.2020 16:32	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	11.03.2020 16:32	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	11.03.2020 16:32	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	11.03.2020 16:32	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	11.03.2020 16:32	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	11.03.2020 16:32	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	11.03.2020 16:32	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	105	%	70-130	11.03.2020 16:32		
4-Bromofluorobenzene		460-00-4	115	%	70-130	11.03.2020 16:32		



## **Flagging Criteria**

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

**BRL** Below Reporting Limit. **ND** Not Detected.

**RL** Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

#### **QC Summary** 676680

#### LT Environmental, Inc.

RDX 17-25

7714384-1-BKS

252

Analytical Method: Chloride by EPA 300

Seq Number: 3141207

7714384-1-BLK

Matrix: Solid

101

Prep Method:

20

E300P

Date Prep: 11.02.2020

LCSD Sample Id: 7714384-1-BSD

mg/kg

Units

mg/kg

**Parameter** 

Chloride

MB Sample Id:

MB Result LCS Sample Id: LCS LCS Result %Rec

253

LCSD Result

Limits LCSD %Rec

101

90-110

RPD %RPD Limit

0

1

Units Analysis Date

Flag 11.02.2020 18:55

Analytical Method: Chloride by EPA 300

Seq Number: Parent Sample Id:

3141207 676514-005 Matrix: Soil

MS Sample Id: 676514-005 S Date Prep:

Prep Method:

11.02.2020 MSD Sample Id: 676514-005 SD

E300P

**Parameter** 

Chloride

Parent Spike Result Amount 3690 199

<10.0

MS MS Result %Rec 3900 106

MSD MSD Result 3880

Limits %Rec 95 90-110 %RPD RPD Limit 20

Analysis

Flag Date 11.02.2020 19:11

Analytical Method: Chloride by EPA 300

3141207

Spike

250

Amount

Matrix: Soil

676679-001 S

Date Prep:

Prep Method:

**RPD** 

11.02.2020

Parent Sample Id:

676679-001

MS Sample Id: MS MS

MSD **MSD** 

%RPD Limits

MSD Sample Id: 676679-001 SD Units

E300P

Analysis Flag

**Parameter** Chloride

Seq Number:

Spike **Parent** Result Amount 344 200

Result %Rec 530 93

Result 542 %Rec 99 90-110

Limit 2 20

mg/kg

Date 11.02.2020 20:28

Analytical Method: TPH by SW8015 Mod

3141201 Seq Number:

7714382-1-BLK

Matrix: Solid

Prep Method: Date Prep:

SW8015P 11.02.2020

LCSD Sample Id: 7714382-1-BSD

**Parameter** 

MB Sample Id:

MB

LCS Sample Id: 7714382-1-BKS LCS LCS

LCSD LCSD

%RPD **RPD** 

Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO)

Result <139 1000 <11.5 1000

MB

101

Spike

MB

Result Amount %Rec 907 1040

Result 91 852

%Rec 85 70-135

Limit 35 6

Limits

70-135

70-135

4

Units

Analysis

Date 11.02.2020 18:36 mg/kg

**Surrogate** 

1-Chlorooctane

o-Terphenyl

%Rec 95

%Rec Flag 125

104 1000 LCS LCS Flag

100 LCSD LCSD

%Rec

105

101

70-135

Flag

Limits

35 mg/kg

11.02.2020 18:36

Units Analysis Date 11.02.2020 18:36

11.02.2020 18:36

3141201

Analytical Method: TPH by SW8015 Mod

103

Matrix: Solid

Prep Method:

SW8015P

Date Prep: 11.02.2020

%

%

**Parameter** 

Seq Number:

MBResult

MB Sample Id: 7714382-1-BLK

Flag

Flag

Motor Oil Range Hydrocarbons (MRO)

<11.5

mg/kg

Units

Date 11.02.2020 18:16

Analysis

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

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

= Parent Result = MS/LCS Result = MSD/LCSD Result MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

LCS = Laboratory Control Sample

Flag

Flag

### QC Summary 676680

#### LT Environmental, Inc.

RDX 17-25

Analytical Method:TPH by SW8015 ModPrep Method:SW8015PSeq Number:3141201Matrix:SoilDate Prep:11.02.2020

Parent Sample Id: 676514-007 MS Sample Id: 676514-007 S MSD Sample Id: 676514-007 SD

RPD **Parent** Spike MS MS Limits %RPD Units Analysis MSD MSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date Gasoline Range Hydrocarbons (GRO) 1000 837 84 0 35 11.02.2020 19:37 <13.9 838 84 70-135 mg/kg 11.02.2020 19:37 70-135 mg/kg Diesel Range Organics (DRO) <11.5 1000 910 91 927 93 2 35

**MSD** Limits Units MS MS MSD Analysis **Surrogate** %Rec Flag Flag Date %Rec 11.02.2020 19:37 1-Chlorooctane 129 133 70-135 % 11.02.2020 19:37 o-Terphenyl 118 123 70-135 %

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

 Seq Number:
 3141311
 Matrix:
 Solid
 Date Prep:
 11.03.2020

 MB Sample Id:
 7714461-1-BLK
 LCS Sample Id:
 7714461-1-BKS
 LCSD Sample Id:
 7714461-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	11.03.2020 09:56
Toluene	< 0.00200	0.100	0.0955	96	0.101	101	70-130	6	35	mg/kg	11.03.2020 09:56
Ethylbenzene	< 0.00200	0.100	0.0976	98	0.102	102	71-129	4	35	mg/kg	11.03.2020 09:56
m,p-Xylenes	< 0.00400	0.200	0.197	99	0.205	103	70-135	4	35	mg/kg	11.03.2020 09:56
o-Xylene	< 0.00200	0.100	0.0967	97	0.102	102	71-133	5	35	mg/kg	11.03.2020 09:56

MBMB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 11.03.2020 09:56 1,4-Difluorobenzene 104 99 104 70-130 % 11.03.2020 09:56 4-Bromofluorobenzene 103 110 70-130 % 110

Analytical Method:BTEX by EPA 8021BPrep Method:SW5035ASeq Number:3141311Matrix: SoilDate Prep:11.03.2020

Parent Sample Id: 676514-007 MS Sample Id: 676514-007 S MSD Sample Id: 676514-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.101	0.107	106	0.0886	89	70-130	19	35	mg/kg	11.03.2020 10:41	
Toluene	< 0.00201	0.101	0.0986	98	0.0879	88	70-130	11	35	mg/kg	11.03.2020 10:41	
Ethylbenzene	< 0.00201	0.101	0.0998	99	0.0910	91	71-129	9	35	mg/kg	11.03.2020 10:41	
m,p-Xylenes	< 0.00402	0.201	0.202	100	0.186	93	70-135	8	35	mg/kg	11.03.2020 10:41	
o-Xylene	< 0.00201	0.101	0.102	101	0.0943	94	71-133	8	35	mg/kg	11.03.2020 10:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		101		70-130	%	11.03.2020 10:41
4-Bromofluorobenzene	107		117		70-130	%	11.03.2020 10:41

MS = Matrix Spike

Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg d conditions d the control cliated.  Received by: (Signature)  Date/Time	reviously negotiated.  Recei		15.50			9			2	
Ag SiO2	reviously negotiated.  Recei		7		-		1		7	
Ag SiO2	reviously negotiated. Recei		)	1) Octali		1		^	3	Bana
Ag SiO2	tances beyond the co	Relinquished by: (Signature)	Date/Time	Da	ture)	Received by: (Signature)	Receive	ature)	by: (Signa	Relinquished by: (Signature)
Ag SiO2	ard terms and condit	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xonco, its affiliates and subcontractors. It assigns standard terms and conditions of service, Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	oany to Xenco, its affilia expenses incurred by the Xenco, but not analyze	any losses or a	purchase order from the purchase order from the purchase order from the purchase of the purchase order from the purchase order	nstitutes a valid prot assume any rand a charge of \$	of samples con les and shall n each project a	and relinquishment o / for the cost of samp 5.00 will be applied to	be liable only charge of \$75	ice: Signature of thiservice, Xenco will I
	u Fe Pb Mg Mn Mo Ni K n Mo Ni Se Ag Tl U	NI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag	Al Sb As Ba Be B ( Sb As Ba Be Cd (	S11 AIS	RCRA 13PPM Texas 11 / TCLP / SPLP 6010: 8RCRA	8RCRA 13	nalyzed	otal 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	6010 :	Total 200.7 / 6010 Circle Method(s) a
	/									
		/		(						
				H						
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				/ ) /						
			_	)				1		
			×	-	3.5-4'	8 1825	10/20/30	H/ S	3.5-1	CH210
Sample Comments			BTEX (	Numb	Depth	Time 5 Sampled	Date Sampled	n Matrix	Sample Identification	Sample Id
lab, if received by 4:30pm			EPA		s:	Total Containers:	To	Yes (No N/A		Sample Custody Seals
TAT starts the day recevied by the			802		10-0	Correction Factor:	Col	Yes No NA		Cooler Custody Seals:
			21B)		7	THINGO		Z	_	Received Intact:
					er ID	Thermometer ID	(	-		Temperature (°C):
				S	e: Yes No	Wet Ice:	k: Yes No	Temp Blank:	CEIPT	SAMPLE RECEIPT
					Due Date:	Due		Byers	Anna Byers	Sampler's Name:
					sh:	Rush:			Liner	P.O. Number:
					Routine 😾	Rou		0010	034820010	Project Number:
Work Order Notes		ANALYSIS REQUEST			Turn Around	-		7-25	RDX 17-25	Project Name:
☐ ADaPT ☐ Other:	Deliverables: EDD		Email: jhernandez@ltenv.com & abyers@ltenv.com	@ltenv.co	il: jhernandez	Ema		281-702-2329	281-70	Phone:
□ bvel III □ bT/UST T□RP □ lel IV	Reporting:Level II	Re	Carlsbad, NM 88220		City, State ZIP:			Midland, TX 79705	Midlan	City, State ZIP:
	State of Project:		5315 Buena Vista Dr	53	Address:			3300 North A Street	3300 N	Address:
⊺	Program: UST/PST	Pro	WPX Energy		Company Name:			LT Environmental, Inc	LT Env	Company Name:
Work Order Comments			Lynda Laumbach	rent) Lyı	Bill to: (if different)			Joseph Hernandez	Joseph	Project Manager:
www.xenco.com Page of		Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)	55-0900) Atlanta,GA	nix,AZ (480-3	392-7550) Phoel	bbs,NM (575-3	Ŧ			
		Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296	s,TX (214) 902-0300 aso,TX (915)585-344	1-5440) EL F	ston, TX (281) 24t lland, TX (432-704	Mid		ABORATORIES	ABURA	
Work Order No:	_	istouy	cliaill of custody	<u>c</u>						

#### **Eurofins Xenco, LLC**

#### 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: 11.02.2020 03.50.00 PM

Temperature Measuring device used: TNM007

Work Order #: 676680

Analyst:

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		1	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	ner/ 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 relinquish	ed/ received?	Yes	
#10 Chain of Custody agrees with sample la	bels/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 to	est(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		N/A	
#18 Water VOC samples have zero headspa	ace?	N/A	

' Must be completed for	after-hours deliver	y of samples	prior to placii	ng in the refrigerator

Checklist completed by:	Ollians,	Date: 11.02.2020
	Martha Castro	
Checklist reviewed by:	Jessica Vramer	Date: 11.03.2020

Jessica Kramer

PH Device/Lot#:

eurofins Environment Testing

# **Certificate of Analysis Summary 676707**

LT Environmental, Inc., Arvada, CO

**Project Id:** 

034820010

**Project Name: RDX 17-25** 

**Contact:** 

Joseph Hernandez

**Report Date:** 11.04.2020 12:59

**Date Received in Lab:** Mon 11.02.2020 15:50

Project Manager: Jessica Kramer

Proje	ct Location:	NM			

	Lab Id:	676707-001			
A a alasta De acceste I	Field Id:	CH01 @ 5.5-6'			
Analysis Requested	Depth:	5.5-6 ft			
	Matrix:	SOIL			
	Sampled:	10.29.2020 10:55			
BTEX by EPA 8021B	Extracted:	11.03.2020 14:07			
	Analyzed:	11.03.2020 17:47			
	Units/RL:	mg/kg RL			
Benzene		< 0.00202 0.00202			
Toluene		< 0.00202 0.00202			
Ethylbenzene		< 0.00202 0.00202			
m,p-Xylenes		<0.00403 0.00403			
o-Xylene		< 0.00202 0.00202			
Total Xylenes		< 0.00202 0.00202			
Total BTEX		< 0.00202 0.00202			
Inorganic Anions by EPA 300	Extracted:	11.03.2020 13:00			
	Analyzed:	11.03.2020 15:21			
	Units/RL:	mg/kg RL			
Chloride		606 49.9			
TPH by SW8015 Mod	Extracted:	11.03.2020 13:27			
	Analyzed:	11.03.2020 16:21			
	Units/RL:	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0			
Diesel Range Organics (DRO)		<50.0 50.0			
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0			
Total TPH		<50.0 50.0			

BRL - Below Reporting Limit

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

Jessica Vramer



# **Analytical Report 676707**

#### for

## LT Environmental, Inc.

Project Manager: Joseph Hernandez

RDX 17-25 034820010 11.04.2020

Collected By: Client

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

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

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

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



11.04.2020

Project Manager: **Joseph Hernandez LT Environmental, Inc.** 

4600 W. 60th Avenue Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): 676707

**RDX 17-25** 

Project Address: NM

#### Joseph Hernandez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 676707. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 676707 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

# **Sample Cross Reference 676707**

LT Environmental, Inc., Arvada, CO

RDX 17-25

 Sample Id
 Matrix
 Date Collected
 Sample Depth
 Lab Sample Id

 CH01 @ 5.5-6'
 S
 10.29.2020 10:55
 5.5 - 6 ft
 676707-001

#### Page 121 of 189

#### **CASE NARRATIVE**

eurofins Environment Testing Xenco

Client Name: LT Environmental, Inc.

Project Name: RDX 17-25

 Project ID:
 034820010
 Report Date:
 11.04.2020

 Work Order Number(s):
 676707
 Date Received:
 11.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

#### **Certificate of Analytical Results 676707**

## LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH01 @ 5.5-6' Matrix: Soil

Date Received:11.02.2020 15:50

Lab Sample Id: 676707-001

Date Collected: 10.29.2020 10:55

Sample Depth: 5.5 - 6 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

MAB

MAB Analyst: Seq Number: 3141306

Date Prep: 11.03.2020 13:00 % Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	606	49.9	mg/kg	11.03.2020 15:21		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

MAB

CACAnalyst: Seq Number: 3141297 Date Prep:

11.03.2020 13:27

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	11.03.2020 16:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	11.03.2020 16:21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	11.03.2020 16:21	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	11.03.2020 16:21	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	131	%	70-135	11.03.2020 16:21
o-Terphenyl	84-15-1	117	%	70-135	11.03.2020 16:21

Wet Weight

11.03.2020 17:47

70-130

## **Certificate of Analytical Results 676707**

#### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH01 @ 5.5-6' Matrix: Soil Date Received:11.02.2020 15:50

Lab Sample Id: 676707-001 Date Collected: 10.29.2020 10:55 Sample Depth: 5.5 - 6 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Analyst: MAB Date Prep: 11.03.2020 14:07 % Moisture: Basis:

460-00-4

Seq Number: 3141303

4-Bromofluorobenzene

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	11.03.2020 17:47	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	11.03.2020 17:47	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	11.03.2020 17:47	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	11.03.2020 17:47	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	11.03.2020 17:47	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	11.03.2020 17:47	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	11.03.2020 17:47	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	104	%	70-130	11.03.2020 17:47		

89



## **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.

**BRL** Below Reporting Limit. **ND** Not Detected.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

#### **QC Summary** 676707

#### LT Environmental, Inc.

RDX 17-25

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3141306

7714455-1-BLK

Matrix: Solid

E300P Prep Method:

Date Prep: 11.03.2020

LCS Sample Id: 7714455-1-BKS

LCSD Sample Id: 7714455-1-BSD

LCS RPD MB Spike LCS Limits %RPD Units Analysis LCSD LCSD Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 260 104 259 90-110 0 20 11.03.2020 15:10 104

**Analytical Method: Inorganic Anions by EPA 300** 

Seq Number: 3141306

MB Sample Id:

Matrix: Soil

Prep Method: E300P

Date Prep: 11.03.2020

mg/kg

676707-001 S 676707-001 MS Sample Id: MSD Sample Id: 676707-001 SD Parent Sample Id:

Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec %Rec Limit Date Result 11.03.2020 15:26 Chloride 606 200 796 95 806 100 90-110 1 20 mg/kg

Analytical Method: Inorganic Anions by EPA 300

3141306 Seq Number:

Matrix: Soil

E300P Prep Method:

Analysis

11.03.2020 15:40

11.03.2020 15:40

Flag

Date Prep: 11.03.2020 MS Sample Id: 676720-001 S MSD Sample Id: 676720-001 SD Parent Sample Id: 676720-001

Spike **RPD Parent** MS MS %RPD Units MSD **MSD** Limite

Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 107 20 11.03.2020 16:43 148 200 361 363 108 90-110 1 mg/kg

Analytical Method: TPH by SW8015 Mod

3141297 Seq Number:

7714426-1-BLK

Matrix: Solid

Prep Method: Date Prep: 11.03.2020

SW8015P

LCS Sample Id: 7714426-1-BKS LCSD Sample Id: 7714426-1-BSD MB Sample Id:

MB Spike LCS LCS LCSD LCSD Limits %RPD **RPD** Units Analysis **Parameter** Result Limit Date Result Amount %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) 11.03.2020 15:40 35 < 50.0 1000 1180 118 1130 113 70-135 4 mg/kg

Diesel Range Organics (DRO) 70-135 35 < 50.0 1000 1250 125 1200 120 mg/kg LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec %Rec Flag Date Flag %Rec 11.03.2020 15:40 1-Chlorooctane 122 130 126 70-135 %

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141297

o-Terphenyl

Matrix: Solid

120

Prep Method:

70-135

4

SW8015P

Date Prep: 11.03.2020

%

MB Sample Id: 7714426-1-BLK

**Parameter** 

MBResult

118

Units

Analysis Date

Flag

Motor Oil Range Hydrocarbons (MRO) < 50.0

117

mg/kg

11.03.2020 15:20

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

[D] = 100\*(C-A) / B $RPD = 200* \mid (C-E) \mid (C+E) \mid$ [D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result

= MSD/LCSD Result

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

Flag

Flag

### QC Summary 676707

#### LT Environmental, Inc.

RDX 17-25

 Analytical Method:
 TPH by SW8015 Mod
 Prep Method:
 SW8015P

 Seq Number:
 3141297
 Matrix:
 Soil
 Date Prep:
 11.03.2020

 Parent Sample Id:
 676707-001
 MS Sample Id:
 676707-001 SD
 MSD Sample Id:
 676707-001 SD

Parameter	Parent	Spike	MS	MS	MSD	MSD	Limits	%RPD	RPD	Units	Analysis
ranameter	Result	Amount	Result	%Rec	Result	%Rec			Limit		Date
Gasoline Range Hydrocarbons (GRO)	< 50.3	1010	1130	112	1050	105	70-135	7	35	mg/kg	11.03.2020 16:41
Diesel Range Organics (DRO)	< 50.3	1010	1150	114	1140	114	70-135	1	35	mg/kg	11.03.2020 16:41

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		133		70-135	%	11.03.2020 16:41
o-Terphenyl	123		105		70-135	%	11.03.2020 16:41

Analytical Method:BTEX by EPA 8021BPrep Method:SW5035ASeq Number:3141303Matrix:SolidDate Prep:11.03.2020MB Sample Id:7714462-1-BLKLCS Sample Id:7714462-1-BKSLCSD Sample Id:7714462-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.0975	98	0.0945	95	70-130	3	35	mg/kg	11.03.2020 15:44
Toluene	< 0.00200	0.100	0.0952	95	0.0926	93	70-130	3	35	mg/kg	11.03.2020 15:44
Ethylbenzene	< 0.00200	0.100	0.0880	88	0.0861	86	71-129	2	35	mg/kg	11.03.2020 15:44
m,p-Xylenes	< 0.00400	0.200	0.178	89	0.173	87	70-135	3	35	mg/kg	11.03.2020 15:44
o-Xylene	< 0.00200	0.100	0.0872	87	0.0851	85	71-133	2	35	mg/kg	11.03.2020 15:44

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		100		100		70-130	%	11.03.2020 15:44
4-Bromofluorobenzene	88		85		85		70-130	%	11.03.2020 15:44

 Analytical Method:
 BTEX by EPA 8021B
 Prep Method:
 SW 5035A

 Seq Number:
 3141303
 Matrix:
 Soil
 Date Prep:
 11.03.2020

 Parent Sample Id:
 676707-001
 MS Sample Id:
 676707-001 SD
 MSD Sample Id:
 676707-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.101	0.129	128	0.117	117	70-130	10	35	mg/kg	11.03.2020 16:29	
Toluene	< 0.00201	0.101	0.123	122	0.111	111	70-130	10	35	mg/kg	11.03.2020 16:29	
Ethylbenzene	< 0.00201	0.101	0.111	110	0.0997	100	71-129	11	35	mg/kg	11.03.2020 16:29	
m,p-Xylenes	< 0.00402	0.201	0.225	112	0.200	100	70-135	12	35	mg/kg	11.03.2020 16:29	
o-Xylene	< 0.00201	0.101	0.109	108	0.0983	98	71-133	10	35	mg/kg	11.03.2020 16:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		70-130	%	11.03.2020 16:29
4-Bromofluorobenzene	86		85		70-130	%	11.03.2020 16:29

**Chain of Custody** 

Work Order No: 676707

Mar 13m	Kelinquisned 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 \$6 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	Circle Method(s) and Metal(s) to be analyzed						(Hp @ 55-6'	mple Identification	Sample Custody Seals: Yes (No	Yes	Received Intact: Yes No	9.	SAMPLE RECEIPT Temp Blank	Sampler's Name: Anna Byers	P.O. Number: Liner	Project Number: 034820010	Project Name: RDX 17-25	Phone: 281-702-2329	City, State ZIP: Midland, TX 79705	Address: 3300 North A Street	Company Name: LT Environmental, Inc	Project Manager: Joseph Hernandez
4	Received by: (Signature)	amples and shall not assume are to each project and a charge	e analyzed TCLP /						S 16/20/30 1055	Matrix Sampled Sampled	otal C		+N.W	Thermometer ID	(Yes)No		P				5	et	l, Inc.	32
illz	nature)	ny responsibility for any losse of \$5 for each sample submit	RCRA 13PPM Texas 11 / TCLP / SPLP 6010: 8RCRA						5.5-6' 1	led Depth	1	-0-7	007	(	Wet Ice: Yes No	Due Date:		Routine 🛱	Turn Around	Email: jhernandez@lter	City, State ZIP:	Address:	Company Name:	Bill to: (if different)
11220 (5:50 2	Date/Time	company to Xenco, its affi es or expenses incurred by ted to Xenco, but not analy	Al Sb As Ba Be B			(H)				TPH (E	(EPA	802	IB)							jhernandez@ltenv.com & abyers@ltenv.com	Carlsbad, NM 88220	5315 Buena Vista Dr	WPX Energy	Lynda Laumbach
	Relinquished by: (Signature)	liates and subcontractors. It assigns s the client if such losses are due to cirn zed. These terms will be enforced unle	Cd Ca Cr Co Cu Fe Pb Mg Mr Cr Co Cu Pb Mn Mo Ni Se Ag		/														ANALYSIS REQUEST	env.com	0	)r		
	re) Received by: (Signature)	tors. It assigns standard terms and conditions use are due to circumstances beyond the control be enforced unless previously negotiated.	Pb Mg Mn Mo Ni K Se Ag SiO2 Ni Se Ag TI U	7	/														EST	Deliverables: EDD	Reporting:Level II	[	Program: UST/PST RP	
	Signature)		3iO2 Na St-IL Sn 1631 / 245.1 / 7							Samp	lab, if re	TAT starts #							Work	ADaPT O	D;T/UST TDp		rownfields F C	Work Order Comments
	Date/Time		Na Sr-IL Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg							Sample Comments	lab, if received by 4:30pm	ho day morning buth							Work Order Notes	Other:	Leiv		1 perfund	

#17 Subcontract of sample(s)?

Analyst:

#18 Water VOC samples have zero headspace?

#### **Eurofins Xenco, LLC**

#### 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: 11.02.2020 03.50.00 PM

Temperature Measuring device used: T\_NM\_007

Work Order #: 676707	Temperature Measu	ring device used: T
	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		1
#2 *Shipping container in good condition?	Y	es

#3 \*Samples received on ice? Yes #4 \*Custody Seals intact on shipping container/ cooler? Yes #5 Custody Seals intact on sample bottles? Yes Yes #6\*Custody Seals Signed and dated? #7 \*Chain of Custody present? Yes #8 Any missing/extra samples? No #9 Chain of Custody signed when relinquished/ received? Yes #10 Chain of Custody agrees with sample labels/matrix? Yes #11 Container label(s) legible and intact? Yes #12 Samples in proper container/ bottle? Yes Samples received in bulk containers. Yes #13 Samples properly preserved? #14 Sample container(s) intact? Yes #15 Sufficient sample amount for indicated test(s)? Yes #16 All samples received within hold time? Yes

Checklist completed by: Cloe Clifton Date: 11.03.2020

PH Device/Lot#:

Checklist reviewed by: Jessica Warner Date: 11.03.2020

No N/A

<sup>\*</sup> Must be completed for after-hours delivery of samples prior to placing in the refrigerator

**Environment Testing** 

# **Certificate of Analysis Summary 676709**

LT Environmental, Inc., Arvada, CO

**Project Id:** 

💸 eurofins

034820029

**Project Name: RDX 17-25** 

**Contact:** 

Joseph Hernandez

**Date Received in Lab:** Mon 11.02.2020 15:50 **Report Date:** 11.05.2020 08:11

Project Manager: Jessica Kramer

**Project Location:** 

NM

	Lab Id:	676709-001			
Analysis Requested	Field Id:	CH02 @ 1-1.5'			
Analysis Kequestea	Depth:	1-1.5 ft			
	Matrix:	SOIL			
	Sampled:	10.29.2020 11:35			
BTEX by EPA 8021B	Extracted:	11.03.2020 09:30			
	Analyzed:	11.03.2020 18:37			
	Units/RL:	mg/kg RL			
Benzene	'	< 0.00201 0.00201			
Toluene		0.00783 0.00201			
Ethylbenzene		0.0187 0.00201			
m,p-Xylenes		0.0368 0.00402			
o-Xylene		0.0433 0.00201			
Total Xylenes		0.0801 0.00201			
Total BTEX		0.107 0.00201			
Inorganic Anions by EPA 300	Extracted:	11.03.2020 13:00			
	Analyzed:	11.03.2020 15:43			
	Units/RL:	mg/kg RL			
Chloride		342 10.0	 _	_	
TPH by SW8015 Mod	Extracted:	11.03.2020 13:27			
	Analyzed:	11.03.2020 17:42			

RL

50.2 50.2

50.2

50.2

mg/kg

< 50.2

< 50.2

< 50.2

< 50.2

BRL - Below Reporting Limit

Total TPH

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

Units/RL:

Jessica Vramer

Gasoline Range Hydrocarbons (GRO)

Motor Oil Range Hydrocarbons (MRO)

Diesel Range Organics (DRO)



# **Analytical Report 676709**

for

## LT Environmental, Inc.

**Project Manager: Joseph Hernandez** 

RDX 17-25 034820029 11.05.2020

Collected By: Client

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

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

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

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



11.05.2020

Project Manager: **Joseph Hernandez LT Environmental, Inc.** 4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): 676709

**RDX 17-25** 

Project Address: NM

#### Joseph Hernandez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 676709. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 676709 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

# **Sample Cross Reference 676709**

LT Environmental, Inc., Arvada, CO

RDX 17-25

 Sample Id
 Matrix
 Date Collected
 Sample Depth
 Lab Sample Id

 CH02 @ 1-1.5'
 S
 10.29.2020 11:35
 1 - 1.5 ft
 676709-001

Xenco

**Environment Testing** 

#### **CASE NARRATIVE**

Page 133 of 189

Client Name: LT Environmental, Inc.

Project Name: RDX 17-25

Project ID: Report Date: 11.05.2020 034820029 Work Order Number(s): 676709 Date Received: 11.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Xenco

#### **Certificate of Analytical Results 676709**

#### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH02 @ 1-1.5' Matrix: Soil Date Received:11.02.2020 15:50

Lab Sample Id: 676709-001

Date Collected: 10.29.2020 11:35

Sample Depth: 1 - 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

Tech:

MAB

MAB Analyst:

Date Prep: 11.03.2020 13:00 % Moisture:

Basis:

Wet Weight

Prep Method: SW8015P

11.03.2020 17:42

Seq Number: 3141306

**Parameter** Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 342 10.0 11.03.2020 15:43 mg/kg

Analytical Method: TPH by SW8015 Mod

MAB

CAC Analyst:

o-Terphenyl

Date Prep: 11.03.2020 13:27 % Moisture:

Basis:

70-135

Wet Weight

Seq Number: 3141297

Parameter	Cas Numbe	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	11.03.2020 17:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.2	50.2		mg/kg	11.03.2020 17:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	11.03.2020 17:42	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	11.03.2020 17:42	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	134	%	70-135	11.03.2020 17:42		

127

84-15-1

## **Certificate of Analytical Results 676709**

#### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH02 @ 1-1.5' Matrix: Soil

Date Received:11.02.2020 15:50

Date Collected: 10.29.2020 11:35

Sample Depth: 1 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Lab Sample Id: 676709-001

11.02.2020.00.20 % Mois

% Moisture:

Analyst: MAB Seq Number: 3141311 Date Prep: 11.03.2020 09:30

Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	11.03.2020 18:37	U	1
Toluene	108-88-3	0.00783	0.00201		mg/kg	11.03.2020 18:37		1
Ethylbenzene	100-41-4	0.0187	0.00201		mg/kg	11.03.2020 18:37		1
m,p-Xylenes	179601-23-1	0.0368	0.00402		mg/kg	11.03.2020 18:37		1
o-Xylene	95-47-6	0.0433	0.00201		mg/kg	11.03.2020 18:37		1
Total Xylenes	1330-20-7	0.0801	0.00201		mg/kg	11.03.2020 18:37		1
Total BTEX		0.107	0.00201		mg/kg	11.03.2020 18:37		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	98	%	70-130	11.03.2020 18:37		
4-Bromofluorobenzene		460-00-4	120	%	70-130	11.03.2020 18:37		



## **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.

**BRL** Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

**DL** Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

Flag

Flag

Flag

#### **QC Summary** 676709

#### LT Environmental, Inc.

RDX 17-25

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3141306

7714455-1-BLK

Matrix:

Solid LCS Sample Id: 7714455-1-BKS

E300P Prep Method:

Date Prep: 11.03.2020

LCSD Sample Id: 7714455-1-BSD

LCS RPD MB Spike LCS Limits %RPD Units Analysis LCSD LCSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date

Chloride <10.0 250 260 104 259 90-110 0 20 11.03.2020 15:10 104 mg/kg

**Analytical Method: Inorganic Anions by EPA 300** 

Seq Number: 3141306

MB Sample Id:

676707-001

Matrix: Soil

Prep Method: Date Prep: 11.03.2020

E300P

Parent Sample Id:

676707-001 S MS Sample Id:

MSD Sample Id: 676707-001 SD

Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec %Rec Limit Date Result

11.03.2020 15:26 Chloride 606 200 796 95 806 100 90-110 1 20 mg/kg

Analytical Method: Inorganic Anions by EPA 300

3141306

E300P Prep Method:

Seq Number: Matrix: Soil Date Prep: 11.03.2020 Parent Sample Id: 676720-001

MS Sample Id: 676720-001 S MSD Sample Id: 676720-001 SD

Spike **RPD Parent** MS MS %RPD Units MSD **MSD** Limite Analysis Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 107 20 11.03.2020 16:43 148 200 361 363 108 90-110 1 mg/kg

Analytical Method: TPH by SW8015 Mod

Seq Number:

3141297

Matrix: Solid

Prep Method:

SW8015P

Date Prep: 11.03.2020 MB Sample Id:

7714426-1-BLK LCS Sample Id: 7714426-1-BKS LCSD Sample Id: 7714426-1-BSD

MB Spike LCS LCS LCSD LCSD Limits %RPD **RPD** Units Analysis **Parameter** Result Limit Date Result Amount %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) 11.03.2020 15:40 35 < 50.0 1000 1180 118 1130 113 70-135 4 mg/kg 11.03.2020 15:40 Diesel Range Organics (DRO) 70-135 4 35 < 50.0 1000 1250 125 1200 120 mg/kg

LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec %Rec Flag Date Flag %Rec 11.03.2020 15:40 1-Chlorooctane 122 130 126 70-135 % 11.03.2020 15:40 o-Terphenyl 117 120 118 70-135 %

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141297 Matrix: Solid

Prep Method:

SW8015P

Date Prep: 11.03.2020

MB Sample Id: 7714426-1-BLK

MB**Parameter** 

Result

Units

Analysis Date

Motor Oil Range Hydrocarbons (MRO) < 50.0

mg/kg

11.03.2020 15:20

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

[D] = 100\*(C-A) / B $RPD = 200* \mid (C-E) \mid (C+E) \mid$ [D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result

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

Flag

Flag

**Parameter** 

### QC Summary 676709

#### LT Environmental, Inc.

RDX 17-25

Analytical Method:TPH by SW8015 ModPrep Method:SW8015PSeq Number:3141297Matrix:SoilDate Prep:11.03.2020

Parent Sample Id: 676707-001 MS Sample Id: 676707-001 S MSD Sample Id: 676707-001 SD RPD **Parent** Spike MS MS Limits %RPD Units Analysis MSD MSD

Result Amount Result %Rec Result %Rec Limit Date Gasoline Range Hydrocarbons (GRO) < 50.3 1010 1050 35 11.03.2020 16:41 1130 112 105 70-135 7 mg/kg 11.03.2020 16:41 1010 70-135 mg/kg Diesel Range Organics (DRO) < 50.3 1150 114 1140 1 35 114

**MSD** Units MS MS MSD Limits Analysis **Surrogate** %Rec Flag Flag Date %Rec 11.03.2020 16:41 1-Chlorooctane 129 133 70-135 % 105 11.03.2020 16:41 o-Terphenyl 123 70-135 %

Analytical Method:BTEX by EPA 8021BPrep Method:SW5035ASeq Number:3141311Matrix: SolidDate Prep:11.03.2020

 Seq Number:
 3141311
 Matrix:
 Solid
 Date Prep:
 11.03.2020

 MB Sample Id:
 7714461-1-BLK
 LCS Sample Id:
 7714461-1-BKS
 LCSD Sample Id:
 7714461-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	11.03.2020 09:56
Toluene	< 0.00200	0.100	0.0955	96	0.101	101	70-130	6	35	mg/kg	11.03.2020 09:56
Ethylbenzene	< 0.00200	0.100	0.0976	98	0.102	102	71-129	4	35	mg/kg	11.03.2020 09:56
m,p-Xylenes	< 0.00400	0.200	0.197	99	0.205	103	70-135	4	35	mg/kg	11.03.2020 09:56
o-Xylene	< 0.00200	0.100	0.0967	97	0.102	102	71-133	5	35	mg/kg	11.03.2020 09:56

MBMB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 11.03.2020 09:56 1,4-Difluorobenzene 104 99 104 70-130 % 11.03.2020 09:56 4-Bromofluorobenzene 103 110 70-130 % 110

Analytical Method:BTEX by EPA 8021BPrep Method:SW5035ASeq Number:3141311Matrix: SoilDate Prep:11.03.2020

Parent Sample Id: 676514-007 MS Sample Id: 676514-007 S MSD Sample Id: 676514-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.101	0.107	106	0.0886	89	70-130	19	35	mg/kg	11.03.2020 10:41	
Toluene	< 0.00201	0.101	0.0986	98	0.0879	88	70-130	11	35	mg/kg	11.03.2020 10:41	
Ethylbenzene	< 0.00201	0.101	0.0998	99	0.0910	91	71-129	9	35	mg/kg	11.03.2020 10:41	
m,p-Xylenes	< 0.00402	0.201	0.202	100	0.186	93	70-135	8	35	mg/kg	11.03.2020 10:41	
o-Xylene	< 0.00201	0.101	0.102	101	0.0943	94	71-133	8	35	mg/kg	11.03.2020 10:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		101		70-130	%	11.03.2020 10:41
4-Bromofluorobenzene	107		117		70-130	%	11.03.2020 10:41

E = MSD/LCSD Result

			0 4		7		4
			120 15-502	as as	-	1	more by
Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	ature)	Received by: (Signature)	iture)	Kelinquished by: (Signature)
	d terms and conditions nees beyond the control lously negotiated.	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 cilent 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.	sses or expenses incurred by mitted to Xenco, but not analy:	\$5 for each sample sub	nd shall not assume any h project and a charge of	of or the cost of samples a 5.00 will be applied to each	ice. Xenco will be liable only co. A minimum charge of \$7
Na Sr Ti Sn U V Zn 1631/245.1/7470/7471: Hg	Ag SiO2	Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be B Cd Ca Cr Co Cu  Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xence the stellar and a characteristics.	SRCRA 13PPM Texas 11 / TCLP / SPLP 6010: 8RCRA	8RCRA / Zed TCLP / S	Metal(s) to be analy and relinquishment of sar	Circle Method(s) and Metal(s) to be analyzed  is: Signature of this document and relinquishment of samples
							Ш
	/						
			}				
			×	1-1.5	10/20/24 1135	5, 5	CH\$2@1-1.
Sample Comments	Sa		TPH (E BTEX (	Depth	Date Time Sampled Sampled	Matrix	entificati
TAT starts the day recevied by the lab, if received by 4:30pm	TAT sta		PA 80 EPA 8	1	Total Containers:	Yes (No) N/A	Sample Custody Seals:
			015 802	200	Correction Factor:	*	Cooler Custody Seals:
			Mod 1B)		MINIO	Sea.	pler Custody Spole
			d)		Thermometer ID	1	Received Intact:
			S	(Yes) No	Yes No Wet Ice:	Temp Blank:	SAMPLE RECEIPT
				Due Date:		Anna Byers	Sampler's Name: Anna
				Rush:	77		
				Routine W	77	034820010	er:
Work Order Notes	V	ANALYSIS REQUEST		Turn Around		KUX 17-25	
Other:	Deliverables: EDD		English Coll. & abyels@llellv.coll	10000		2	
I LAP LIEIV			Iteny com & abvers@lt.	Email: ihernandez@	Е	281-702-2329	Phone: 281-
	byel III Trulet		2,654	City, State ZIP:		Midland, TX 79705	City, State ZIP: Midla
1 Sperfund	Liowilleids			Address:		3300 North A Street	Address: 3300
	Cidel Collin	Dr		Company Name:		LT Environmental, Inc.	Company Name: LT E
- age	Work Order Com		t) Lynda Laumbach	Bill to: (if different)		Joseph Hernandez	Project Manager: Jose
_	WWW Years com	Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)	AZ (480-355-0900) Atlanta,	75-392-7550) Phoenix	Hobbs, NM (5		
		Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334 Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbook TX (806)794-1706	200 Dallas,TX (214) 902-03 440) EL Paso,TX (915)585-	louston, TX (281) 240-4 Midland, TX (432-704-5	7	RATORIES	LABOR
(		- 1/2/20 10 Color 10					

## **Eurofins Xenco, LLC**

#### Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 11.02.2020 03.50.00 PM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 676709

Analyst:

Temperature Measuring device used: T\_NM\_007

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

* Must be completed for	after-hours deliver	v of samples prior t	o placing in the	refrigerator
Must be combleted for	alter-mours acriver	V OI SAIIIDIGS DITOI I	o biacilia ili tile	i eli idei atoi

Checklist completed by:	Cloe Clifton	Date: <u>11.03.2020</u>	
Checklist reviewed by:	Jessica Vramer	Date: 11.03.2020	

Jessica Kramer

PH Device/Lot#:

# **Certificate of Analysis Summary 676712**

LT Environmental, Inc., Arvada, CO

**Project Name: RDX 17-25** 

**Project Id:** 

034820029

**Date Received in Lab:** Mon 11.02.2020 15:50

**Contact:** 

Joseph Hernandez

**Report Date:** 11.05.2020 08:14

Project Manager: Jessica Kramer

Project Location:	NM
-------------------	----

eurofins Environment Testing

Analysis Requested	Lab Id:	676712-001			
	Field Id:	CH02 @ 1.5-2'			
	Depth:	1.5-2 ft			
	Matrix:	SOIL			
	Sampled:	10.29.2020 11:48			
BTEX by EPA 8021B	Extracted:	11.03.2020 09:30			
	Analyzed:	11.04.2020 10:23			
	Units/RL:	mg/kg RL			
Benzene		< 0.0196 0.0196			
Toluene		<0.0196 0.0196			
Ethylbenzene		0.0667 0.0196			
m,p-Xylenes		0.377 0.0392			
o-Xylene		0.150 0.0196			
Total Xylenes		0.527 0.0196			
Total BTEX		0.594 0.0196			
Inorganic Anions by EPA 300	Extracted:	11.03.2020 13:00			
	Analyzed:	11.03.2020 15:54			
	Units/RL:	mg/kg RL			
Chloride		660 10.0			
TPH by SW8015 Mod	Extracted:	11.03.2020 13:27			
	Analyzed:	11.03.2020 18:22			
	Units/RL:	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		88.2 50.0			
Diesel Range Organics (DRO)		748 50.0			
Motor Oil Range Hydrocarbons (MRO)		59.4 50.0			
Total TPH		896 50.0			

BRL - Below Reporting Limit

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

Jessica Vramer



# **Analytical Report 676712**

for

## LT Environmental, Inc.

Project Manager: Joseph Hernandez

RDX 17-25 034820029 11.05.2020

Collected By: Client

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

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

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

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



11.05.2020

Project Manager: Joseph Hernandez

LT Environmental, Inc. 4600 W. 60th Avenue Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): 676712

**RDX 17-25** 

Project Address: NM

#### Joseph Hernandez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 676712. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 676712 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

# **Sample Cross Reference 676712**

LT Environmental, Inc., Arvada, CO

RDX 17-25

 Sample Id
 Matrix
 Date Collected
 Sample Depth
 Lab Sample Id

 CH02 @ 1.5- 2'
 S
 10.29.2020 11:48
 1.5 - 2 ft
 676712-001

#### Page 145 of 189

#### **CASE NARRATIVE**

eurofins Environment Testing Xenco

Client Name: LT Environmental, Inc.

Project Name: RDX 17-25

 Project ID:
 034820029
 Report Date:
 11.05.2020

 Work Order Number(s):
 676712
 Date Received:
 11.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Xenco

### **Certificate of Analytical Results 676712**

#### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH02 @ 1.5- 2' Matrix: Soil Date Received:11.02.2020 15:50

Lab Sample Id: 676712-001

Seq Number: 3141306

Date Collected: 10.29.2020 11:48

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep:

11.03.2020 13:00

% Moisture:

Basis:

Wet Weight

**Analysis Date Parameter** Cas Number Result RLUnits Flag Dil Chloride 16887-00-6 10.0 11.03.2020 15:54 660 mg/kg

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

MAB

CAC Analyst: Seq Number: 3141297 Date Prep:

11.03.2020 13:27

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	88.2	50.0		mg/kg	11.03.2020 18:22		1
Diesel Range Organics (DRO)	C10C28DRO	748	50.0		mg/kg	11.03.2020 18:22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	59.4	50.0		mg/kg	11.03.2020 18:22		1
Total TPH	PHC635	896	50.0		mg/kg	11.03.2020 18:22		1
Surrogate	C	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	125	%	70-135	11.03.2020 18:22
o-Terphenyl	84-15-1	133	%	70-135	11.03.2020 18:22

## **Certificate of Analytical Results 676712**

### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: **CH02** @ **1.5-2'** 

Matrix: Soil

Date Received:11.02.2020 15:50

Lab Sample Id: 676712-001

Date Collected: 10.29.2020 11:48

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 09:30

% Moisture:

Seq Number: 3141311

Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.0196	0.0196		mg/kg	11.04.2020 10:23	U	1
Toluene	108-88-3	< 0.0196	0.0196		mg/kg	11.04.2020 10:23	U	1
Ethylbenzene	100-41-4	0.0667	0.0196		mg/kg	11.04.2020 10:23		1
m,p-Xylenes	179601-23-1	0.377	0.0392		mg/kg	11.04.2020 10:23		1
o-Xylene	95-47-6	0.150	0.0196		mg/kg	11.04.2020 10:23		1
Total Xylenes	1330-20-7	0.527	0.0196		mg/kg	11.04.2020 10:23		1
Total BTEX		0.594	0.0196		mg/kg	11.04.2020 10:23		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	95	%	70-130	11.04.2020 10:23		
4-Bromofluorobenzene		460-00-4	106	%	70-130	11.04.2020 10:23		



## **Flagging Criteria**

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

**BRL** Below Reporting Limit. **ND** Not Detected.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Flag

Analysis

Analysis

#### **QC Summary** 676712

#### LT Environmental, Inc.

RDX 17-25

7714455-1-BKS

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3141306

7714455-1-BLK

Matrix: Solid

LCS Sample Id:

E300P Prep Method:

RPD

Date Prep: 11.03.2020

LCSD Sample Id: 7714455-1-BSD Units

MB Sample Id: LCS MB Spike LCS Limits %RPD LCSD LCSD

**Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 260 104 259 90-110 0 20 11.03.2020 15:10 104 mg/kg

**Analytical Method: Inorganic Anions by EPA 300** 

Seq Number: 3141306

Parent Sample Id:

Matrix: Soil 676707-001 S 676707-001 MS Sample Id:

Prep Method: E300P

Date Prep: 11.03.2020 MSD Sample Id: 676707-001 SD

Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec %Rec Limit Date Result

11.03.2020 15:26 Chloride 606 200 796 95 806 100 90-110 1 20 mg/kg

Analytical Method: Inorganic Anions by EPA 300

3141306 Seq Number: Matrix: Soil

E300P Prep Method:

**RPD** 

%RPD

Limite

Date Prep: 11.03.2020

Units

MS Sample Id: 676720-001 S MSD Sample Id: 676720-001 SD Parent Sample Id: 676720-001 MS

Spike **Parent** MSD **MSD** Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 107 20 11.03.2020 16:43 148 200 361 363 108 90-110 1 mg/kg

Analytical Method: TPH by SW8015 Mod

3141297 Seq Number:

MS

SW8015P Prep Method:

Date Prep: 11.03.2020

Matrix: Solid 7714426-1-BLK LCS Sample Id: 7714426-1-BKS LCSD Sample Id: 7714426-1-BSD MB Sample Id:

MB Spike LCS LCS LCSD LCSD Limits %RPD **RPD** Units Analysis **Parameter** Result Limit Date Result Amount %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) 11.03.2020 15:40 35 < 50.0 1000 1180 118 1130 113 70-135 4 mg/kg 11.03.2020 15:40 Diesel Range Organics (DRO) 70-135 4 35 < 50.0 1000 1250 125 1200 120 mg/kg

LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec %Rec Flag Date Flag %Rec 11.03.2020 15:40 1-Chlorooctane 122 130 126 70-135 % 11.03.2020 15:40 o-Terphenyl 117 120 118 70-135 %

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141297 Matrix: Solid Prep Method: Date Prep: 11.03.2020

SW8015P

MB Sample Id: 7714426-1-BLK

**Parameter** 

MBResult

Units

Analysis Date

Flag

Flag

Motor Oil Range Hydrocarbons (MRO) < 50.0

mg/kg

11.03.2020 15:20

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

[D] = 100\*(C-A) / B $RPD = 200* \mid (C-E) \mid (C+E) \mid$ [D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result

= MSD/LCSD Result

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

Flag

Flag

#### **QC Summary** 676712

#### LT Environmental, Inc.

RDX 17-25

Analytical Method: TPH by SW8015 Mod SW8015P Prep Method: Seg Number: 3141297 Matrix: Soil Date Prep: 11.03.2020

676707-001 MS Sample Id: 676707-001 S MSD Sample Id: 676707-001 SD Parent Sample Id: RPD

**Parent** Spike MS MS Limits %RPD Units Analysis MSD **MSD Parameter** Result Amount Result %Rec Result %Rec Limit Date Gasoline Range Hydrocarbons (GRO) < 50.3 1010 1050 35 11.03.2020 16:41 1130 112 105 70-135 7 mg/kg 11.03.2020 16:41 1010 70-135 Diesel Range Organics (DRO) < 50.3 1150 114 1140 1 35 mg/kg 114

Analysis MS MS MSD Limits Units MSD **Surrogate** %Rec Flag Flag Date %Rec 11.03.2020 16:41 1-Chlorooctane 129 133 70-135 % 11.03.2020 16:41 o-Terphenyl 123 105 70-135 %

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method: 3141311 Matrix: Solid

Seq Number: Date Prep: 11.03.2020 LCS Sample Id: 7714461-1-BKS LCSD Sample Id: 7714461-1-BSD MB Sample Id: 7714461-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	11.03.2020 09:56
Toluene	< 0.00200	0.100	0.0955	96	0.101	101	70-130	6	35	mg/kg	11.03.2020 09:56
Ethylbenzene	< 0.00200	0.100	0.0976	98	0.102	102	71-129	4	35	mg/kg	11.03.2020 09:56
m,p-Xylenes	< 0.00400	0.200	0.197	99	0.205	103	70-135	4	35	mg/kg	11.03.2020 09:56
o-Xylene	< 0.00200	0.100	0.0967	97	0.102	102	71-133	5	35	mg/kg	11.03.2020 09:56

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 11.03.2020 09:56 1,4-Difluorobenzene 104 99 104 70-130 % 11.03.2020 09:56 103 70-130 % 4-Bromofluorobenzene 110 110

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method: Seg Number: 3141311 Matrix: Soil Date Prep: 11.03.2020 676514-007 MS Sample Id: 676514-007 S MSD Sample Id: 676514-007 SD

RPD **Parent** Spike MS MS MSD MSD Limits %RPD Units Analysis Flag **Parameter** Limit Date Result Amount Result %Rec %Rec Result 11.03.2020 10:41 < 0.00201 0.101 0.107 106 0.0886 70-130 19 35 Benzene 89 mg/kg 11.03.2020 10:41 70-130 35 Toluene < 0.00201 0.101 0.0986 98 0.0879 88 11 mg/kg Ethylbenzene < 0.00201 0.101 0.0998 99 0.0910 91 71-129 9 35 11.03.2020 10:41 mg/kg 0.201 0.202 100 8 35 11.03.2020 10:41 m,p-Xylenes < 0.00402 0.186 93 70-135 mg/kg < 0.00201 0.101 0.102 101 0.0943 94 71-133 8 35 mg/kg 11.03.2020 10:41 o-Xylene

MS MS **MSD MSD** Limits Units Analysis Surrogate Flag Flag Date %Rec %Rec 11.03.2020 10:41 1,4-Difluorobenzene 100 101 70-130 % 11.03.2020 10:41 4-Bromofluorobenzene 107 117 70-130 %

Parent Sample Id:

E = MSD/LCSD Result

Chain of Custody

Work Order No: 676717

nature) Date/Time							
		2	11/20 15:50	li li	10		lan h
	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	ignature)	Received by: (Signature)	ure)	Relinquished by: (Signature)
	ctors. It assigns standard terms and conditions see are due to circumstances beyond the control be enforced unless previously negotiated.	of service. Xence 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.	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 los 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	yalid purchase order from c any responsibility for any l ge of \$5 for each sample su	samples constitutes a ss and shall not assume sach project and a char	or the cost of sample to of will be applied to	ce. Xenco will be liable only o. A minimum charge of \$75.
2 Na Sr Tl Sn U V Zn 1631/245.1/7470 /7471: Hg	Mg Mn Mo Ni K Se Ag SiO2 Na Se Ag TI U 163	Mn Mo Ni	A Sb As Ba Be B	RCRA 13PPM Texas 11 / TCLP / SPLP 6010: 8RCRA	8RCRA alyzed TCLP /	200.8 / 6020: Metal(s) to be an	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed
		( 0					
			- × ×	8 1.5-21	SHII DE/UDA	2' 5	HØ2@1.5-
Sample Comments			Numb TPH (E BTEX (	Time Depth	Date Ti Sampled Sam	Matrix	Sample Identification
lab, if received by 4:30pm			PA 8	ainers:	Total Containers:	Yes No N/A	Sample Custody Seals:
TAT state the day received by the			015 I 8021	Factor: -0-2	Correction Factor:	Yes HALO NIA	Cooler Custody Seals:
			Mod B)	1007	THE W	(Yes No	Received Intact:
			)	Thermometer ID	Therm	1-21-0	Temperature (°C):
				Wet Ice: Yes No	(Yes/No	Temp Blank:	SAMPLE RECEIPT
				Due Date:		yers	Sampler's Name: Anna Byers
				Rush: (			P.O. Number: Liner
				Routine X		010	Project Number: 034820010
Work Order Notes		ANALYSIS REQUEST		Turn Around		7-25	Project Name: RDX 17-25
ADaPT Other:	Deliverables: EDD A		Email: jhernandez@ltenv.com & abyers@ltenv.com	Email: jhernandez@		281-702-2329	Phone: 281-70
BT/UST TORP LOBIN O	Reporting:Level II   bvel III		Carlsbad, NM 88220	City, State ZIP		Midland, TX 79705	City, State ZIP: Midlan
			5315 Buena Vista Dr	Address:		3300 North A Street	Address: 3300 N
□rownfields F□C ¶perfund □	Program: UST/PST RP h	7	e: WPX Energy	Company Name:		LT Environmental, Inc	Company Name: LT En
Work Order Comments	Work Ore		t) Lynda Laumbach	Bill to: (if different)		Joseph Hernandez	Project Manager: Josep

### **Eurofins Xenco, LLC**

### Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 11.02.2020 03.50.00 PM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 676712

Analyst:

Temperature Measuring device used: T\_NM\_007

Date: 11.03.2020

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		1	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contai	ner/ 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 relinquish	ned/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	Samples received in bulk containers.
#13 Samples properly preserved?		Yes	oomainere.
#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 headsp	ace?	N/A	

Checklist completed by: Date: 11.03.2020 Checklist reviewed by:

Jessica Kramer

Jessica Kramer

PH Device/Lot#:

#### Page 153 of 189

# **Certificate of Analysis Summary 676713**

LT Environmental, Inc., Arvada, CO

**Project Name: RDX 17-25** 

**Project Id:** 

034820010

**Date Received in Lab:** Mon 11.02.2020 15:50

**Contact:** 

Joseph Hernandez

**Report Date:** 11.05.2020 08:36

**Project Location:** 

NM

Project Manager: Jessica Kramer

	Lab Id:	676713-001				
Analysis Requested	Field Id:	CH02 @3.5-4	ļ'			
Thursts Requesicu	Depth:	3.5-4 ft				
	Matrix:	SOIL				
	Sampled:	10.29.2020 12:	10			
BTEX by EPA 8021B	Extracted:	11.03.2020 09:	30			
	Analyzed:	11.03.2020 19:	44			
	Units/RL:	mg/kg	RL			
Benzene		< 0.00202 0.0	00202			
Toluene		0.0244 0.0	00202			
Ethylbenzene			00202			
m,p-Xylenes			00403			
o-Xylene			00202			
Total Xylenes			00202			
Total BTEX		0.647 0.0	00202			
Inorganic Anions by EPA 300	Extracted:	11.03.2020 13:	00			
	Analyzed:	11.03.2020 16:	10			
	Units/RL:	mg/kg	RL			
Chloride		212	10.0			
TPH by SW8015 Mod	Extracted:	11.03.2020 13:	27			
	Analyzed:	11.03.2020 18:	43			
	Units/RL:	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		60.4	50.2			
Diesel Range Organics (DRO)		298	50.2			
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2			
Total TPH		358	50.2			

BRL - Below Reporting Limit

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

Jessica Weamer



# **Analytical Report 676713**

for

## LT Environmental, Inc.

**Project Manager: Joseph Hernandez** 

RDX 17-25 034820010 11.05.2020

Collected By: Client

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

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

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

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



11.05.2020

Project Manager: **Joseph Hernandez LT Environmental, Inc.** 4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): 676713

**RDX 17-25** 

Project Address: NM

#### Joseph Hernandez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 676713. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 676713 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

## **Sample Cross Reference 676713**

LT Environmental, Inc., Arvada, CO

RDX 17-25

 Sample Id
 Matrix
 Date Collected
 Sample Depth
 Lab Sample Id

 CH02 @3.5-4'
 S
 10.29.2020 12:10
 3.5 - 4 ft
 676713-001

Xenco

**Environment Testing** 

#### **CASE NARRATIVE**

Page 157 of 189

Client Name: LT Environmental, Inc.

Project Name: RDX 17-25

Project ID: Report Date: 11.05.2020 034820010 Work Order Number(s): 676713 Date Received: 11.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

### **Certificate of Analytical Results 676713**

### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: **CH02** @**3.5-4**'

Matrix: Soil

Date Received:11.02.2020 15:50

Lab Sample Id: 676713-001

Date Collected: 10.29.2020 12:10

Sample Depth: 3.5 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep: 11.03.2020 13:00

% Moisture:

Seq Number: 3141306

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	212	10.0	mg/kg	11.03.2020 16:10		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

MAB

Analyst: CAC Seq Number: 3141297 Date Prep: 11.03.2020 13:27

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	60.4	50.2		mg/kg	11.03.2020 18:43		1
Diesel Range Organics (DRO)	C10C28DRO	298	50.2		mg/kg	11.03.2020 18:43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	11.03.2020 18:43	U	1
Total TPH	PHC635	358	50.2		mg/kg	11.03.2020 18:43		1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	126	%	70-135	11.03.2020 18:43
o-Terphenyl	84-15-1	127	%	70-135	11.03.2020 18:43

Wet Weight

## **Certificate of Analytical Results 676713**

### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH02 @3.5-4' Matrix: Soil Date Received:11.02.2020 15:50

Lab Sample Id: 676713-001 Date Collected: 10.29.2020 12:10 Sample Depth: 3.5 - 4 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Seq Number: 3141311

Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
71-43-2	< 0.00202	0.00202	mg/kg	11.03.2020 19:44	U	1
108-88-3	0.0244	0.00202	mg/kg	11.03.2020 19:44		1
100-41-4	0.0502	0.00202	mg/kg	11.03.2020 19:44		1
179601-23-1	0.437	0.00403	mg/kg	11.03.2020 19:44		1
95-47-6	0.135	0.00202	mg/kg	11.03.2020 19:44		1
1330-20-7	0.572	0.00202	mg/kg	11.03.2020 19:44		1
	0.647	0.00202	mg/kg	11.03.2020 19:44		1
	108-88-3 100-41-4 179601-23-1 95-47-6	108-88-3       0.0244         100-41-4       0.0502         179601-23-1       0.437         95-47-6       0.135         1330-20-7       0.572	108-88-3       0.0244       0.00202         100-41-4       0.0502       0.00202         179601-23-1       0.437       0.00403         95-47-6       0.135       0.00202         1330-20-7       0.572       0.00202	108-88-3       0.0244       0.00202       mg/kg         100-41-4       0.0502       0.00202       mg/kg         179601-23-1       0.437       0.00403       mg/kg         95-47-6       0.135       0.00202       mg/kg         1330-20-7       0.572       0.00202       mg/kg	108-88-3       0.0244       0.00202       mg/kg       11.03.2020 19:44         100-41-4       0.0502       0.00202       mg/kg       11.03.2020 19:44         179601-23-1       0.437       0.00403       mg/kg       11.03.2020 19:44         95-47-6       0.135       0.00202       mg/kg       11.03.2020 19:44         1330-20-7       0.572       0.00202       mg/kg       11.03.2020 19:44	108-88-3       0.0244       0.00202       mg/kg       11.03.2020 19:44         100-41-4       0.0502       0.00202       mg/kg       11.03.2020 19:44         179601-23-1       0.437       0.00403       mg/kg       11.03.2020 19:44         95-47-6       0.135       0.00202       mg/kg       11.03.2020 19:44         1330-20-7       0.572       0.00202       mg/kg       11.03.2020 19:44

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.03.2020 19:44	
1,4-Difluorobenzene	540-36-3	88	%	70-130	11.03.2020 19:44	



## **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.

**BRL** Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

**DL** Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

Flag

Flag

Flag

#### **QC Summary** 676713

#### LT Environmental, Inc.

RDX 17-25

LCSD

LCSD

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3141306

Matrix: Solid

E300P Prep Method:

RPD

%RPD

%RPD

Limite

Limits

Date Prep: 11.03.2020

Analysis

LCS Sample Id: 7714455-1-BKS MB Sample Id: 7714455-1-BLK Spike

MB

LCSD Sample Id: 7714455-1-BSD

Units

Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 260 104 259 90-110 0 20 11.03.2020 15:10 104 mg/kg

LCS

**Analytical Method: Inorganic Anions by EPA 300** 

Seq Number: 3141306 Matrix: Soil

LCS

Prep Method: E300P

Date Prep: 11.03.2020

676707-001 S 676707-001 MS Sample Id: MSD Sample Id: 676707-001 SD Parent Sample Id: Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis

**Parameter** Result Amount Result %Rec %Rec Limit Date Result 11.03.2020 15:26 Chloride 606 200 796 95 806 100 90-110 1 20 mg/kg

Analytical Method: Inorganic Anions by EPA 300

3141306 Seq Number:

E300P Prep Method:

Units

Matrix: Soil Date Prep: 11.03.2020

MS

MS Sample Id: 676720-001 S MSD Sample Id: 676720-001 SD Parent Sample Id: 676720-001 **RPD** MS

Spike **Parent** MSD **MSD** Analysis Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 107 20 11.03.2020 16:43 148 200 361 363 108 90-110 1 mg/kg

Analytical Method: TPH by SW8015 Mod

3141297 Seq Number:

Matrix: Solid

SW8015P Prep Method:

Date Prep: 11.03.2020

7714426-1-BLK LCS Sample Id: 7714426-1-BKS LCSD Sample Id: 7714426-1-BSD MB Sample Id:

MB Spike LCS LCS LCSD LCSD Limits %RPD **RPD** Units Analysis **Parameter** Result Limit Date Result Amount %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) 11.03.2020 15:40 35 < 50.0 1000 1180 118 1130 113 70-135 4 mg/kg 11.03.2020 15:40 Diesel Range Organics (DRO) 70-135 4 35 < 50.0 1000 1250 125 1200 120 mg/kg

LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec %Rec Flag Date Flag %Rec 11.03.2020 15:40 1-Chlorooctane 122 130 126 70-135 % 11.03.2020 15:40 o-Terphenyl 117 120 118 70-135 %

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141297 Matrix: Solid

Prep Method: Date Prep:

SW8015P 11.03.2020

MB Sample Id: 7714426-1-BLK

**Parameter** Result

MB

Units

Analysis

Date

Motor Oil Range Hydrocarbons (MRO) < 50.0

mg/kg

11.03.2020 15:20

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

[D] = 100\*(C-A) / B $RPD = 200* \mid (C-E) \mid (C+E) \mid$ [D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result

= MSD/LCSD Result

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

Flag

Flag

### QC Summary 676713

#### LT Environmental, Inc.

RDX 17-25

 Analytical Method:
 TPH by SW8015 Mod
 Prep Method:
 SW8015P

 Seq Number:
 3141297
 Matrix:
 Soil
 Date Prep:
 11.03.2020

 Parent Sample Id:
 676707-001
 MS Sample Id:
 676707-001 SD
 MSD Sample Id:
 676707-001 SD

RPD **Parent** Spike MS MS Limits %RPD Units Analysis MSD **MSD Parameter** Result Amount Result %Rec Result %Rec Limit Date Gasoline Range Hydrocarbons (GRO) < 50.3 1010 1050 35 11.03.2020 16:41 1130 112 105 70-135 7 mg/kg 11.03.2020 16:41 1010 70-135 Diesel Range Organics (DRO) < 50.3 1150 114 1140 1 35 mg/kg 114

Analysis MS MS MSD Limits Units MSD **Surrogate** %Rec Flag Flag Date %Rec 11.03.2020 16:41 1-Chlorooctane 129 133 70-135 % 11.03.2020 16:41 o-Terphenyl 123 105 70-135 %

Analytical Method:BTEX by EPA 8021BPrep Method:SW5035ASeq Number:3141311Matrix:SolidDate Prep:11.03.2020

MB Sample Id: 7714461-1-BLK LCS Sample Id: 7714461-1-BKS LCSD Sample Id: 7714461-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	11.03.2020 09:56
Toluene	< 0.00200	0.100	0.0955	96	0.101	101	70-130	6	35	mg/kg	11.03.2020 09:56
Ethylbenzene	< 0.00200	0.100	0.0976	98	0.102	102	71-129	4	35	mg/kg	11.03.2020 09:56
m,p-Xylenes	< 0.00400	0.200	0.197	99	0.205	103	70-135	4	35	mg/kg	11.03.2020 09:56
o-Xylene	< 0.00200	0.100	0.0967	97	0.102	102	71-133	5	35	mg/kg	11.03.2020 09:56

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 11.03.2020 09:56 1,4-Difluorobenzene 104 99 104 70-130 % 11.03.2020 09:56 103 70-130 % 4-Bromofluorobenzene 110 110

 Analytical Method:
 BTEX by EPA 8021B
 Prep Method:
 SW 5035A

 Seq Number:
 3141311
 Matrix:
 Soil
 Date Prep:
 11.03.2020

 Parent Sample Id:
 676514-007
 MS Sample Id:
 676514-007 S
 MSD Sample Id:
 676514-007 SD

RPD **Parent** Spike MS MS MSD MSD Limits %RPD Units Analysis Flag **Parameter** Limit Date Result Amount Result %Rec %Rec Result 11.03.2020 10:41 < 0.00201 0.101 0.107 106 0.0886 70-130 19 35 Benzene 89 mg/kg 11.03.2020 10:41 70-130 35 Toluene < 0.00201 0.101 0.0986 98 0.0879 88 11 mg/kg Ethylbenzene < 0.00201 0.101 0.0998 99 0.0910 91 71-129 9 35 11.03.2020 10:41 mg/kg 0.201 0.202 100 8 35 11.03.2020 10:41 m,p-Xylenes < 0.00402 0.186 93 70-135 mg/kg < 0.00201 0.101 0.102 101 0.0943 94 71-133 8 35 mg/kg 11.03.2020 10:41 o-Xylene

MS MS **MSD MSD** Limits Units Analysis Surrogate Flag Flag Date %Rec %Rec 11.03.2020 10:41 1,4-Difluorobenzene 100 101 70-130 % 11.03.2020 10:41 4-Bromofluorobenzene 107 117 70-130 %

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

Reporting: Level II		
Work Orde  PRP Pro  Pro  AD  AD  AG  Signa  By: (Signa	4	d
Work Order Co	24/10	lun by
PRP   rownfiel   3T/US   ADaPT   ADaPT   Ag SiO2 Na : 1631	re) Received by: (Signature) D	Relinquished by: (Signature)
Reporting: Level II	or the cost of samples and shall not assume any responsibility for any losses on will be applied to each project and a charge of \$5 for each sample submitted.	ervice. Xenco will be liable only for tenco. A minimum charge of \$75.00
WPX Energy  S315 Buena Vista Dr  Carisbad, NM 88220  ANALYSIS REQUEST  ANALYSIS ANAL	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors.	ice: Signature of this document and
ANALYSIS REQUEST  ANALYSIS REQUEST  Work Order Co Program: UST/PST RP rownfiel State of Project: Reporting:Level II reporting:Level II reporting:Level III reporting:L	8RCRA 13PPM Texas 11 / TCLP / SPLP 6010: 8RCRA	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed
ANALYSIS REQUEST  ANALYSIS REQUEST   Work Order Co Program: UST/PST		
ANALYSIS REQUEST  ANALYSIS REQUEST  Work Order Co Program: UST/PST		
ANALYSIS REQUEST  ANALYSIS REQUEST  Work Order Co Program: UST/PST		
ANALYSIS REQUEST  ANALYSIS REQUEST  Work Order Co Program: UST/PST   RP   rownfiel State of Project: Reporting: Level		
ANALYSIS REQUEST  ANALYSIS REQUEST   Work Order Co Program: UST/PST		
ANALYSIS REQUEST  ANALYSIS REQUEST   Work Order Co Program: UST/PST   RP   rownfiel State of Project: Reporting: Level		
ANALYSIS REQUEST  ANALYSIS REQUEST  Work Order Co Program: UST/PST   RP   rownfiel State of Project: Reporting: Level		
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ANALYSIS REQUEST  ANALYSIS REQUEST  Work Order Co Program: UST/PST		
ANALYSIS REQUEST  Work Order Co Program: UST/PST   RP   rownfiel State of Project: Reporting: Level	, 5 ippa/sp 120 3.5-4, 1	CH02@3.5-4
ANALYSIS REQUEST  Work Order Co Program: UST/PST   RP   rownfiel State of Project: Reporting: Level	Matrix Date Time Depth	Sample Identification
ANALYSIS REQUEST  Work Order Co Program: UST/PST	No N/A Total Containers:	
Work Order Comments  Program: UST/PST	N/A Correction Factor: -0-2	Cooler Custody Seals: Yo
Work Order Comments  Program: UST/PST	+NM007	Received Intact:
Program: UST/PST   RP   rownfields R C   perfund State of Project:  Reporting:Level	Thermometer ID	Temperature (°C):
Work Order Comments  Program: UST/PST	Temp Blank: Yes No Wet Ice: Yes No	SAMPLE RECEIPT
Work Order Comments  Program: UST/PST   RP   rownfields R C   sperfund State of Project:  Reporting:Level      bvel       }T/UST   RP   Lel  V    Deliverables: EDD   ADaPT   Other:  ANALYSIS REQUEST   Work Order Notes	/ers Due Date:	Sampler's Name: Anna Byers
Work Order Comments  Program: UST/PST		P.O. Number: Liner
Work Order Comments  Program: UST/PST	Ro	Project Number: 034820010
Work Order Comments  Program: UST/PST	-25 Turn Around	Project Name: RDX 17-25
Lynda Laumbach   Work Order Comments		Phone: 281-702-2329
Lynda Laumbach   Work Order Comments	e ZIP:	City, State ZIP: Midland,
Lynda Laumbach  Work Order Comments  WPX Energy  Program: UST/PST RP rownfields f		
Lynda Laumbach	15.	Company Name: LT Envir
	Joseph Hernandez Bill to: (if different)	Project Manager: Joseph I
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page of		
Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  Midland TX (432-704-5440) El Paro TX (915)585-3443 Libbook TX (805)704-1906	т.	LABORATORIES
Chain of Custody Work Order No: UTGTIS		

### **Eurofins Xenco, LLC**

## Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 11.02.2020 03.50.00 PM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 676713

Analyst:

Temperature Measuring device used: T\_NM\_007

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

* Must be completed	for after-hours	delivery of	f samples pr	ior to plac	cing in tl	ne refrigerator

Checklist completed by:	Cloe Clifton	Date: <u>11.03.2020</u>
Checklist reviewed by:	Jessica Vramer	Date: 11.03.2020

Jessica Kramer

PH Device/Lot#:

eurofins Environment Testing

# **Certificate of Analysis Summary 676715**

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-25

Project Id:

034820010

NM

D . D .

**Date Received in Lab:** Mon 11.02.2020 15:50

Contact:

**Project Location:** 

Joseph Hernandez

**Report Date:** 11.05.2020 08:37

Project Manager: Jessica Kramer

Toject Location.				<b>J</b>	anager.	
	Lab Id:	676715-001				
Analysis Requested	Field Id:	CH02 @ 5.5-6'				
Anatysis Requested	Depth:	5.5-6 ft				
	Matrix:	SOIL				
	Sampled:	10.29.2020 12:30				
BTEX by EPA 8021B	Extracted:	11.03.2020 09:30				
	Analyzed:	11.03.2020 20:06				
	Units/RL:	mg/kg RI				
Benzene		< 0.00200 0.0020	)			
Toluene		<0.00200 0.0020	)			
Ethylbenzene		< 0.00200 0.0020	)			
m,p-Xylenes		< 0.00399 0.0039	)			
o-Xylene		< 0.00200 0.0020	)			
Total Xylenes		< 0.00200 0.0020				
Total BTEX		< 0.00200 0.0020	)			
Inorganic Anions by EPA 300	Extracted:	11.03.2020 13:00				
	Analyzed:	11.03.2020 16:16				
	Units/RL:	mg/kg RI	,			
Chloride		148 49.	)			
TPH by SW8015 Mod	Extracted:	11.03.2020 13:27				
	Analyzed:	11.03.2020 19:03				
	Units/RL:	mg/kg RI	,			
Gasoline Range Hydrocarbons (GRO)		<50.2 50.	2			
Diesel Range Organics (DRO)		99.0 50.	2			
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.	2			
Total TPH		99.0 50.	2			

BRL - Below Reporting Limit

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

Jessica Vramer



# **Analytical Report 676715**

for

## LT Environmental, Inc.

**Project Manager: Joseph Hernandez** 

RDX 17-25 034820010 11.05.2020

Collected By: Client

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

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

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

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



11.05.2020

Project Manager: **Joseph Hernandez LT Environmental, Inc.** 4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): 676715

**RDX 17-25** 

Project Address: NM

#### Joseph Hernandez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 676715. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 676715 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

## **Sample Cross Reference 676715**

LT Environmental, Inc., Arvada, CO

RDX 17-25

 Sample Id
 Matrix
 Date Collected
 Sample Depth
 Lab Sample Id

 CH02 @ 5.5-6'
 S
 10.29.2020 12:30
 5.5 - 6 ft
 676715-001

#### **CASE NARRATIVE**

eurofins
Environment Testing
Xenco

Client Name: LT Environmental, Inc.

Project Name: RDX 17-25

 Project ID:
 034820010
 Report Date:
 11.05.2020

 Work Order Number(s):
 676715
 Date Received:
 11.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

### **Certificate of Analytical Results 676715**

## LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: **CH02** @ **5.5-6**'

Matrix: Soil

Date Received:11.02.2020 15:50

Lab Sample Id: 676715-001

Date Collected: 10.29.2020 12:30

Sample Depth: 5.5 - 6 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep: 11.03.2020 13:00

% Moisture:

Seq Number: 3141306

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	148	49.9	mg/kg	11.03.2020 16:16		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

MAB

Analyst: CAC Seq Number: 3141297 Date Prep: 11.03.2020 13:27

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	11.03.2020 19:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	99.0	50.2		mg/kg	11.03.2020 19:03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	11.03.2020 19:03	U	1
Total TPH	PHC635	99.0	50.2		mg/kg	11.03.2020 19:03		1
Surrogate	(	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	127	%	70-135	11.03.2020 19:03
o-Terphenyl	84-15-1	132	%	70-135	11.03.2020 19:03

Wet Weight

## **Certificate of Analytical Results 676715**

### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH02 @ 5.5-6' Matrix: Soil Date Received:11.02.2020 15:50

Lab Sample Id: 676715-001 Date Collected: 10.29.2020 12:30 Sample Depth: 5.5 - 6 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

Seq Number: 3141311

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	11.03.2020 20:06	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	11.03.2020 20:06	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	11.03.2020 20:06	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	11.03.2020 20:06	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	11.03.2020 20:06	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	11.03.2020 20:06	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	11.03.2020 20:06	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	Flag
1,4-Difluorobenzene	540-36-3	76	%	70-130	11.03.2020 20:06	
4-Bromofluorobenzene	460-00-4	98	%	70-130	11.03.2020 20:06	



## **Flagging Criteria**

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

**BRL** Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

**DL** Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

#### **QC Summary** 676715

#### LT Environmental, Inc.

RDX 17-25

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3141306

LCS Sample Id: 7714455-1-BKS 7714455-1-BLK

Matrix: Solid Date Prep:

Limits

7714455-1-BSD

E300P

E300P

E300P

11.03.2020

11.03.2020

Analysis

MB Sample Id: LCS MB Spike LCS LCSD LCSD LCSD Sample Id: Units

Prep Method:

RPD

Prep Method:

Prep Method:

%RPD

Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 260 104 259 90-110 0 20 11.03.2020 15:10 104 mg/kg

**Analytical Method: Inorganic Anions by EPA 300** 

Seq Number: 3141306 676707-001

Parent Sample Id:

Matrix: Soil Date Prep:

676707-001 S MS Sample Id: MSD Sample Id: 676707-001 SD

Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec %Rec Limit Date Result

11.03.2020 15:26 Chloride 606 200 796 95 806 100 90-110 1 20 mg/kg

Analytical Method: Inorganic Anions by EPA 300

3141306 Seq Number: Matrix: Soil Date Prep: 11.03.2020

MS Sample Id: 676720-001 S MSD Sample Id: 676720-001 SD Parent Sample Id: 676720-001

Spike **RPD Parent** MS MS %RPD Units MSD **MSD** Limite Analysis Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 107 20 11.03.2020 16:43 148 200 361 363 108 90-110 1 mg/kg

Analytical Method: TPH by SW8015 Mod

SW8015P Prep Method: 3141297 Matrix: Solid Seq Number: Date Prep: 11.03.2020

7714426-1-BLK LCS Sample Id: 7714426-1-BKS LCSD Sample Id: 7714426-1-BSD MB Sample Id:

MB Spike LCS LCS LCSD LCSD Limits %RPD **RPD** Units Analysis Flag **Parameter** Result Limit Date Result Amount %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) 11.03.2020 15:40 35 < 50.0 1000 1180 118 1130 113 70-135 4 mg/kg 11.03.2020 15:40 Diesel Range Organics (DRO) 70-135 4 35 < 50.0 1000 1250 125 1200 120 mg/kg

LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec %Rec Flag Date Flag %Rec 11.03.2020 15:40 1-Chlorooctane 122 130 126 70-135 % 11.03.2020 15:40 o-Terphenyl 117 120 118 70-135 %

Analytical Method: TPH by SW8015 Mod Prep Method:

Seq Number: 3141297 Matrix: Solid Date Prep: 11.03.2020

MB Sample Id: 7714426-1-BLK

MBUnits Analysis Flag **Parameter** Result Date

11.03.2020 15:20 Motor Oil Range Hydrocarbons (MRO) < 50.0 mg/kg

SW8015P

Flag

Flag

Flag

### QC Summary 676715

#### LT Environmental, Inc.

RDX 17-25

 Analytical Method:
 TPH by SW8015 Mod
 Prep Method:
 SW8015P

 Seq Number:
 3141297
 Matrix:
 Soil
 Date Prep:
 11.03.2020

 Parent Sample Id:
 676707-001
 MS Sample Id:
 676707-001 SD
 MSD Sample Id:
 676707-001 SD

RPD **Parent** Spike MS MS Limits %RPD Units Analysis MSD **MSD Parameter** Result Amount Result %Rec Result %Rec Limit Date Gasoline Range Hydrocarbons (GRO) < 50.3 1010 1050 35 11.03.2020 16:41 1130 112 105 70-135 7 mg/kg 11.03.2020 16:41 1010 70-135 Diesel Range Organics (DRO) < 50.3 1150 114 1140 1 35 mg/kg 114

MSD Analysis MS MS Limits Units MSD **Surrogate** %Rec Flag Flag Date %Rec 11.03.2020 16:41 1-Chlorooctane 129 133 70-135 % 11.03.2020 16:41 o-Terphenyl 123 105 70-135 %

Analytical Method:BTEX by EPA 8021BPrep Method:SW5035ASeq Number:3141311Matrix: SolidDate Prep:11.03.2020

 Seq Number:
 3141311
 Matrix:
 Solid
 Date Prep:
 11.03.2020

 MB Sample Id:
 7714461-1-BLK
 LCS Sample Id:
 7714461-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	11.03.2020 09:56
Toluene	< 0.00200	0.100	0.0955	96	0.101	101	70-130	6	35	mg/kg	11.03.2020 09:56
Ethylbenzene	< 0.00200	0.100	0.0976	98	0.102	102	71-129	4	35	mg/kg	11.03.2020 09:56
m,p-Xylenes	< 0.00400	0.200	0.197	99	0.205	103	70-135	4	35	mg/kg	11.03.2020 09:56
o-Xylene	< 0.00200	0.100	0.0967	97	0.102	102	71-133	5	35	mg/kg	11.03.2020 09:56

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 11.03.2020 09:56 1,4-Difluorobenzene 104 99 104 70-130 % 11.03.2020 09:56 4-Bromofluorobenzene 103 70-130 % 110 110

 Analytical Method:
 BTEX by EPA 8021B
 Prep Method:
 SW 5035A

 Seq Number:
 3141311
 Matrix:
 Soil
 Date Prep:
 11.03.2020

 Parent Sample Id:
 676514-007
 MS Sample Id:
 676514-007 S
 MSD Sample Id:
 676514-007 SD

RPD **Parent** Spike MS MS MSD MSD Limits %RPD Units Analysis **Parameter** Limit Date Result Amount Result %Rec %Rec Result 11.03.2020 10:41 < 0.00201 0.101 0.107 106 0.0886 70-130 19 35 Benzene 89 mg/kg 11.03.2020 10:41 70-130 35 Toluene < 0.00201 0.101 0.0986 98 0.0879 88 11 mg/kg Ethylbenzene < 0.00201 0.101 0.0998 99 0.0910 91 71-129 9 35 11.03.2020 10:41 mg/kg 0.201 0.202 100 8 35 11.03.2020 10:41 m,p-Xylenes < 0.00402 0.186 93 70-135 mg/kg < 0.00201 0.101 0.102 101 0.0943 94 71-133 8 35 mg/kg 11.03.2020 10:41 o-Xylene

MS MS MSD **MSD** Limits Units Analysis Surrogate Flag Flag Date %Rec %Rec 11.03.2020 10:41 1,4-Difluorobenzene 100 101 70-130 % 11.03.2020 10:41 4-Bromofluorobenzene 107 117 70-130 %

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 Duplic

 $Log\ Diff. = Log(Sample\ Duplicate) - Log(Original\ Sample)$ 

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result

E = MSD/LCSD Result

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

			Chain of	Custody		Work Order No:	676715
RATORIES	Midia	on,TX (281) 240-4200 and,TX (432-704-544)	) Dallas,TX (214) 902-0 0) EL Paso,TX (915)58	0300 San Antonio,TX (210) 509-3: 5-3443 Lubbock TX (806)794-129	334		
	Hobbs, NM (575-39	32-7550) Phoenix,AZ	(480-355-0900) Atlant	a,GA (770-449-8800) Tampa,FL	(813-620-2000)		Page \ of \
eph Hernandez		Bill to: (if different)	Lynda Laumbach			ğ	
Environmental, Inc.		Company Name:	WPX Energy		Program: UST/PS	- I	norfund
0 North A Street		Address:	5315 Buena Vista	a Dr	State of Project		Thermund
land, TX 79705		City State ZIP:	Carlehad NM 88	330	Reporting   eve	TOI IT TILL INVE	
-702-2329	Email	jhernandez@lte	nv.com & abvers@	ltenv.com	Deliverables: EDD	ADapt C	
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820010	Rout	ine 🔀		ANAL GIO KE	A CEST		WORK Order Notes
r	Rush	٦					
a Byers	Due	Date:					
Temp Blank	No	Ш					
1-2/10	The	140					
Meg No	+ 10000		3)				
Yes MO NA	Correction Factor:	i,	0216				
Yes (No) N/A	Total Containers:	er of	EPA 8			TAT	TAT starts the day recevied by the lab, if received by 4:30pm
7	ā.	Depth	втех				Sample Comments
5.	1230	6	×				
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it and relinquishment of sa ly for the cost of samples : 75.00 will be applied to eac	mples constitutes a valid pure and shall not assume any resp h project and a charge of \$5 f	thase order from client consibility for any losso or each sample submit	company to Xenco, its a ss or expenses incurred ted to Xenco, but not ana	ffiliates and subcontractors. It assignly the client if such losses are due to lyzed. These terms will be enforced in	Ins standard terms and conditorized the conditorized the country and stances beyond the country and stances.		
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1		112 ZO	Date/Time	2			
	Project Manager:    Joseph Hernandez	Toject Manager:    Joseph Hermandez   Joseph Hermandez	# Houston, TX (281) 240-4200 Midland, TX (382-704-540) Marrix Street    Company Name:   Address:   City, State ZIP:	Houston, TX (281) 240-4200 Dallas TX (214) 9024 Midland TX (432-704-5440) EL Paso, TX (915)59 Hobbs, MM (575-392-7550) Phoenix, AZ (480-385-0900). Atlan Environmental, Inc. Company Name: Lynda Laumbach Company Name: Lynda Laumbach Company Name: Lynda Laumbach Company Name: Lynda Laumbach Company Name: WPX Energy Address: S315 Buena Vist Band, TX 79705  Temp Blank: Yes No	Contain Part   Cont	Housen, TX (81) 240-4200   Date; TX (82) 250-2200   San Anandach (770-449-8500) Tampa, Ft. (81) 6-05-2200)	Work Order No 794-1296  mpa,FL (813-620-2000)  Work Order Co Program: UST/PST RP rownfile State of Project: Reporting:Level II svel III rownfile State of Project: Reporting:Level II rownfile R

## **Eurofins Xenco, LLC**

### 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: 11.02.2020 03.50.00 PM

Temperature Measuring device used: T\_NM\_007

Work Order #: 676715

Analyst:

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		1	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	iner/ 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 relinquisl	hed/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	Samples received in bulk containers.
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated	test(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		No	
#18 Water VOC samples have zero headsp	pace?	N/A	

* Must be	completed for	after-hours	delivery of	samples	prior to	placing in	the i	refrigerato	16

Checklist completed by:	Cloe Clifton	Date: 11.03.2020
Checklist reviewed by:	Jessica Vramer	Date: 11 03 2020

Jessica Kramer

PH Device/Lot#:

# **Certificate of Analysis Summary 676719**

LT Environmental, Inc., Arvada, CO

**Project Id:** 

**Contact:** 

034820010

Joseph Hernandez

**Project Name: RDX 17-25** 

**Date Received in Lab:** Mon 11.02.2020 15:50

**Report Date:** 11.05.2020 08:10

**Project Location:** 

eurofins Environment Testing

NM

Project Manager: Jessica Kramer

	Lab Id:	676719-001			
Analysis Requested	Field Id:	CH02 @ 8-8.5'			
mulysis Requested	Depth:	8-8.5 ft			
	Matrix:	SOIL			
	Sampled:	10.29.2020 13:15			
BTEX by EPA 8021B	Extracted:	11.03.2020 09:30			
	Analyzed:	11.03.2020 21:14			
	Units/RL:	mg/kg RL			
Benzene		< 0.00202 0.00202			
Toluene		< 0.00202 0.00202			
Ethylbenzene		<0.00202 0.00202			
m,p-Xylenes		<0.00403 0.00403			
o-Xylene		<0.00202 0.00202			
Total Xylenes		< 0.00202 0.00202			
Total BTEX		< 0.00202 0.00202			
Inorganic Anions by EPA 300	Extracted:	11.03.2020 13:00			
	Analyzed:	11.03.2020 16:32			
	Units/RL:	mg/kg RL			
Chloride		157 10.0			
TPH by SW8015 Mod	Extracted:	11.03.2020 13:27			
	Analyzed:	11.03.2020 20:04			
	Units/RL:	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8			
Diesel Range Organics (DRO)		<49.8 49.8			
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8			
Total TPH		<49.8 49.8			

BRL - Below Reporting Limit

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

Jessica Weamer



# **Analytical Report 676719**

for

## LT Environmental, Inc.

**Project Manager: Joseph Hernandez** 

RDX 17-25 034820010 11.05.2020

Collected By: Client

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

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

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

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



11.05.2020

Project Manager: **Joseph Hernandez LT Environmental, Inc.** 

4600 W. 60th Avenue Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): 676719

**RDX 17-25** 

Project Address: NM

#### Joseph Hernandez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 676719. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 676719 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

# **Sample Cross Reference 676719**

LT Environmental, Inc., Arvada, CO

RDX 17-25

 Sample Id
 Matrix
 Date Collected
 Sample Depth
 Lab Sample Id

 CH02 @ 8-8.5'
 S
 10.29.2020 13:15
 8 - 8.5 ft
 676719-001

#### Page 181 of 189

#### **CASE NARRATIVE**

eurofins Environment Testing Xenco

Client Name: LT Environmental, Inc.

Project Name: RDX 17-25

 Project ID:
 034820010
 Report Date:
 11.05.2020

 Work Order Number(s):
 676719
 Date Received:
 11.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

### **Certificate of Analytical Results 676719**

### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: **CH02** @ **8-8.5**'

Matrix: Soil

Date Received:11.02.2020 15:50

Lab Sample Id: 676719-001

Date Collected: 10.29.2020 13:15

Sample Depth: 8 - 8.5 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep: 11.03.2020 13:00

% Moisture:

Seq Number: 3141306

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	157	10.0	mg/kg	11.03.2020 16:32		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

MAB

Analyst: CAC Seq Number: 3141297 Date Prep: 11.03.2020 13:27

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	11.03.2020 20:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	11.03.2020 20:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	11.03.2020 20:04	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	11.03.2020 20:04	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	135	%	70-135	11.03.2020 20:04
o-Terphenyl	84-15-1	124	%	70-135	11.03.2020 20:04

Wet Weight

11.03.2020 21:14

70-130

Xenco

## **Certificate of Analytical Results 676719**

### LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: CH02 @ 8-8.5' Matrix: Soil Date Received:11.02.2020 15:50

Lab Sample Id: 676719-001 Date Collected: 10.29.2020 13:15 Sample Depth: 8 - 8.5 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: MAB

540-36-3

Seq Number: 3141311

1,4-Difluorobenzene

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	11.03.2020 21:14	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	11.03.2020 21:14	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	11.03.2020 21:14	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	11.03.2020 21:14	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	11.03.2020 21:14	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	11.03.2020 21:14	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	11.03.2020 21:14	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	4	460-00-4	115	%	70-130	11.03.2020 21:14		

103

%



## **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.

**BRL** Below Reporting Limit. **ND** Not Detected.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

#### **QC Summary** 676719

#### LT Environmental, Inc.

RDX 17-25

7714455-1-BKS

259

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3141306

> LCS Sample Id: 7714455-1-BLK

Prep Method:

RPD

Limit

20

RPD

E300P

Matrix: Solid Date Prep:

LCSD Sample Id: 7714455-1-BSD

**Parameter** 

Chloride

MB Sample Id:

MB Spike Result Amount <10.0

LCS LCS Result %Rec

260

LCSD LCSD Result %Rec

104

Limits %RPD

0

%RPD

Units Analysis Date

11.03.2020

Flag 11.03.2020 15:10

**Analytical Method: Inorganic Anions by EPA 300** 

Seq Number:

3141306

Matrix: Soil

104

90-110

Prep Method: E300P Date Prep:

Units

mg/kg

mg/kg

11.03.2020

Parent Sample Id:

676707-001

676707-001 S MS Sample Id:

MSD Sample Id: 676707-001 SD

**Parameter** 

Chloride

Chloride

Parent Spike Result Amount 606 200

Result

148

MS MS Result %Rec 796 95

MSD MSD %Rec Result 806

MSD

363

1130

Limits 100 90-110

90-110

70-135

Limit 1 20

Analysis

Flag Date 11.03.2020 15:26

Analytical Method: Inorganic Anions by EPA 300

Seq Number: Parent Sample Id:

3141306

Matrix: Soil MS Sample Id: 676720-001 S

200

250

E300P Prep Method: Date Prep:

**RPD** 

Limit

20

**RPD** 

Limit

35

70-135

70-135

11.03.2020

**Parameter** 

676720-001 **Parent** 

Spike MS Result Amount

361

MS %Rec Result 107

**MSD** %Rec

108

%RPD Limite

1

MSD Sample Id: 676720-001 SD Units

mg/kg

Analysis Flag Date

11.03.2020 16:43

Analytical Method: TPH by SW8015 Mod

3141297

Matrix: Solid

Prep Method:

SW8015P

Seq Number: MB Sample Id:

7714426-1-BLK

LCS Sample Id: 7714426-1-BKS

Date Prep: 11.03.2020 LCSD Sample Id: 7714426-1-BSD

**Parameter** 

Gasoline Range Hydrocarbons (GRO)

MB Spike Result Amount < 50.0 1000 1000

122

117

Result 1180

LCS LCS %Rec 118

130

120

LCSD LCSD Limits %Rec Result

113

126

118

%RPD

4

Units

Analysis Flag Date 11.03.2020 15:40

mg/kg 11.03.2020 15:40 Diesel Range Organics (DRO) 70-135 4 35 < 50.0 1250 125 1200 120 mg/kg LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec %Rec Flag Date Flag %Rec 11.03.2020 15:40

1-Chlorooctane

o-Terphenyl

3141297

Analytical Method: TPH by SW8015 Mod

Matrix: Solid

Prep Method: Date Prep: SW8015P 11.03.2020

MB Sample Id: 7714426-1-BLK

**Parameter** 

Seq Number:

MBResult

Units

%

%

Analysis Date

Flag

11.03.2020 15:40

Motor Oil Range Hydrocarbons (MRO)

< 50.0

mg/kg

11.03.2020 15:20

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

[D] = 100\*(C-A) / B $RPD = 200* \mid (C-E) \mid (C+E) \mid$ [D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result = MSD/LCSD Result

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

Flag

Flag

### QC Summary 676719

#### LT Environmental, Inc.

RDX 17-25

Analytical Method:TPH by SW8015 ModPrep Method:SW8015PSeq Number:3141297Matrix:SoilDate Prep:11.03.2020

Parent Sample Id: 676707-001 MS Sample Id: 676707-001 S MSD Sample Id: 676707-001 SD

RPD **Parent** Spike MS MS Limits %RPD Units Analysis MSD MSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date Gasoline Range Hydrocarbons (GRO) < 50.3 1010 1050 35 11.03.2020 16:41 1130 112 105 70-135 7 mg/kg 11.03.2020 16:41 1010 70-135 mg/kg Diesel Range Organics (DRO) < 50.3 1150 114 1140 1 35 114

**MSD** Units MS MS **MSD** Limits Analysis **Surrogate** %Rec Flag Flag Date %Rec 11.03.2020 16:41 1-Chlorooctane 129 133 70-135 % 105 11.03.2020 16:41 o-Terphenyl 123 70-135 %

Analytical Method: BTEX by EPA 8021B

Seg Number: 3141311 Matrix: Solid Prep Method: SW5035A

Date Prep: 11.03.2020

 Seq Number:
 3141311
 Matrix:
 Solid
 Date Prep:
 11.03.2020

 MB Sample Id:
 7714461-1-BLK
 LCS Sample Id:
 7714461-1-BKS
 LCSD Sample Id:
 7714461-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	11.03.2020 09:56
Toluene	< 0.00200	0.100	0.0955	96	0.101	101	70-130	6	35	mg/kg	11.03.2020 09:56
Ethylbenzene	< 0.00200	0.100	0.0976	98	0.102	102	71-129	4	35	mg/kg	11.03.2020 09:56
m,p-Xylenes	< 0.00400	0.200	0.197	99	0.205	103	70-135	4	35	mg/kg	11.03.2020 09:56
o-Xylene	< 0.00200	0.100	0.0967	97	0.102	102	71-133	5	35	mg/kg	11.03.2020 09:56

MBMB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 11.03.2020 09:56 1,4-Difluorobenzene 104 99 104 70-130 % 11.03.2020 09:56 4-Bromofluorobenzene 103 110 70-130 % 110

 Analytical Method:
 BTEX by EPA 8021B
 Prep Method:
 SW5035A

 Seq Number:
 3141311
 Matrix:
 Soil
 Date Prep:
 11.03.2020

 Parent Sample Id:
 676514-007
 MS Sample Id:
 676514-007 S
 MSD Sample Id:
 676514-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.101	0.107	106	0.0886	89	70-130	19	35	mg/kg	11.03.2020 10:41	
Toluene	< 0.00201	0.101	0.0986	98	0.0879	88	70-130	11	35	mg/kg	11.03.2020 10:41	
Ethylbenzene	< 0.00201	0.101	0.0998	99	0.0910	91	71-129	9	35	mg/kg	11.03.2020 10:41	
m,p-Xylenes	< 0.00402	0.201	0.202	100	0.186	93	70-135	8	35	mg/kg	11.03.2020 10:41	
o-Xylene	< 0.00201	0.101	0.102	101	0.0943	94	71-133	8	35	mg/kg	11.03.2020 10:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		101		70-130	%	11.03.2020 10:41
4-Bromofluorobenzene	107		117		70-130	%	11.03.2020 10:41

E = MSD/LCSD Result

LABOR	ABORATORIES	М	uston,TX (281) 240-4200 idland,TX (432-704-5440	Chain of Custody  Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334  Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296		Work Order No: 616 111
		Hobbs,NM (575	-392-7550) Phoenix,AZ	Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)	Tampa,FL (813-620-2000) www.xenco.com	om Page of
Project Manager: Jose	Joseph Hernandez		Bill to: (if different)	Lynda Laumbach		Comments
	LT Environmental, Inc		Company Name:	WPX Energy	Program: UST/PST RP ro	□rownfields f□c {□perfund □
	3300 North A Street		Address:	5315 Buena Vista Dr	1	
te ZIP:	Midland, TX 79705		City, State ZIP:	Carlsbad, NM 88220	evel III	BT/UST TORP LOBIN O
	281-702-2329	Em	ail: jhernandez@lter	Email: jhernandez@ltenv.com & abyers@ltenv.com	Deliverables: EDD	ADaPT Other:
Name:	RDX 17-25		Turn Around	ANALYS	YSIS REQUEST	Work Order Notes
ň	034820010	Ro	Routine 🛱			
	ï	Ru	Rush:			
ne:	Anna Byers	Dı	Due Date:			
SAMPLE RECEIPT	Temp Blank:	k: Yes No Wet Ice:	ce: Yes) No			
Temperature (°C):	1-2/1-0	The		10.		
Received Intact:	Z	THMOO		(1B)		
Sample Custody Seals:	Yes (No ) N/A	Total Containers:	200	PA 80		TAT starts the day recevied by the lab, if received by 4:30pm
Sample Identification	tion Matrix	Date Time Sampled Sampled	d Depth	TPH (EPBTEX (E		Sample Comments
CH020 8-	8.5' S	15/20/20/13/5	8-8.5' 1	×		
	1					
				5		
					/	
					7	
Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	200.8 / 6020: od Metal(s) to be ar		RCRA 13PPM Texas 11 CCLP / SPLP 6010: 8RCRA	Al Sb As Ba Be B Sb As Ba Be Cd	Cu Fe Pb Mg Mn Mo Ni K Se Ag Mn Mo Ni Se Ag TI U	SiO2 Na Sr TI Sn U V Zn 1631/245.1/7470/7471: Hg
otice: Signature of this docume f service. Xenco will be liable of f Xenco. A minimum charge of	ent and relinquishment only for the cost of samp \$75.00 will be applied to	of samples constitutes a valid ples and shall not assume any peach project and a charge o	purchase order from clien responsibility for any loss f \$5 for each sample submi	t company to Xenco, its affiliates and subcontrates or expenses incurred by the client if such lotted to Xenco, but not analyzed. These terms with	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$7 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	
Relinquished by: (Signature)	nature)	Received by: (Signature)	ature)	Date/Time Relinquished by	by: (Signature) Received by: (Signature)	ature) Date/Time
miles		C	द्या	11/20 15:50 2		
	1	9		4		

## **Eurofins Xenco, LLC**

### Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 11.02.2020 03.50.00 PM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 676719

Analyst:

Temperature Measuring device used: T\_NM\_007

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		1	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	ner/ 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 relinquish	ed/ received?	Yes	
#10 Chain of Custody agrees with sample la	bels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	Samples received in bulk containers.
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated to	est(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		No	
#18 Water VOC samples have zero headspa	ace?	N/A	

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

Checklist completed by:	Cloe Clifton	Date: 11.03.2020
Checklist reviewed by:	Jessica Vramer	Date: 11.03.2020

Jessica Kramer

PH Device/Lot#:

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

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

**State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505** 

CONDITIONS

Action 201020

#### **CONDITIONS**

Operator:	OGRID:
WPX Energy Permian, LLC	246289
Devon Energy - Regulatory	Action Number:
Oklahoma City, OK 73102	201020
	Action Type:
	[IM-SD] Incident File Support Doc (ENV) (IM-BNF)

#### CONDITIONS

Created By	Condition	Condition Date
amaxwell	Work plan approved. Variance approved for sampling sidewalls and excavation base every 500 square feet. Submit a closure report by 6/30/2023.	3/27/2023