NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 03 2018
RECEIVED

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

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

nAB1800557573 * 244289

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: RKI Exploration / WPX Energy	Contact: James Raley
Address: 5315 Buena Vista Dr.	Telephone No: 575-689-7597
Facility Name: RDX 15-11	Facility Type: Well Pad

Surface Owner: Federal	Mineral Owner: Federal	API No. 30- 015-37093

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	15	26S	30E	220	FNL	1500	FWL	Eddy

Latitude 32.043733284 N **Longitude** -103.872277755 W

NATURE OF RELEASE

Type of Release: Produced Water ~~and Oil~~	Volume of Release: 75 bbls	Volume Recovered 65 bbls
Source of Release; Water Knockout	Date and Hour of Occurrence 12/21/2017	Date and Hour of Discovery 12/21/2017 at 10:15 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? C. Weaver, M. Bratcher	
By Whom? Karolina Blaney	Date and Hour 12/21/2017 3:33 PM	
Was a Watercourse Reached? ☒ Yes ☐ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The cause of this spill is equipment failure; a gasket on a man cover for a water knockout failed which resulted in a 75 bbls spill of produced water into a dirt SPCC containment. 65 bbls were recovered with a vac truck. Flow to the water knockout vessel was immediately stopped and repairs were made to the damaged gasket.

Describe Area Affected and Cleanup Action Taken.*
Impacts were limited to fluids inside of SPCC containment and light misting on some vegetation along east edge of containment. Free liquids were immediately recovered, a one call was placed and affected soils removed. Samples to be collected from the affected area and will be analyzed for TPH, BTEX and chlorides in accordance with NM OCD Guidelines. Any additional remediation to be determined based on sample results.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: James Raley	Approved by Environmental Specialist: Signed By
Title: Environmental Specialist	Approval Date: 1/5/18 Expiration Date: N/A
E-mail Address: james.raley@wpxenergy.com	Conditions of Approval: See attached Attached ☐ ARP-4545
Date: 1/3/2018 Phone: 575-689-7597	

* Attach Additional Sheets If Necessary

1/4/18 AB

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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	nAB1800557573
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: WPX Energy Permian, LLC	OGRID: 246289
Contact Name: Jim Raley	Contact Telephone: 575-689-7597
Contact email: Jim.Raley@dvn.com	Incident # *(assigned by OCD)*: nAB1800557573
Contact mailing address: 5315 Buena Vista Drive, Carlsbad NM	

Location of Release Source

Latitude 32.043733284 Longitude -103.872277755
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: RDX 15-11	Site Type: Well Pad
Date Release Discovered: 12/21/2017	API# *(if applicable)*: 30-015-37093

Unit Letter	Section	Township	Range	County
F	15	26S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls):	Volume Recovered (bbls):
☒ Produced Water	Volume Released (bbls): 75	Volume Recovered (bbls): 65
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:
The cause of this spill is equipment failure; a gasket on a man cover for a water knock out which resulted in a 75 bbls spill of produced water into a dirt SPCC containment. 65 bbls were recovered with a vac truck. Flow to the water knockout vessel was immediately stopped and repairs were made to the damaged gasket.

$$bbl\ estimate = \frac{saturated\ soil\ volume\ (ft^3)}{4.21\ (\frac{ft^3}{bbl\ equivalent})} * estimated\ porosity\ (\%) + recovered\ fluids\ (bbl)$$

State of New Mexico
Oil Conservation Division

Incident ID	nAB1800557573
District RP	
Facility ID	
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Unauthorized release of a volume, excluding gases, of 25 barrels or more.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Immediate notice was given by Karolina Blaney, to "EMNRD" Crystal Weaver and "BLM" Shelly Tucker via email on December 21, 2017.

Initial Response

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

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

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

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

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

Printed Name: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 9/21/2023

email: Jim.Raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

Incident ID	nAB1800557573
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Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nAB1800557573
District RP	
Facility ID	
Application ID	

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

Printed Name: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 9/21/2023

email: Jim.Raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

Incident ID	nAB1800557573
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Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 9/21/2023

email: Jim.Raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: Ashley Maxwell Date: 10/02/2023

Printed Name: Ashley Maxwell Title: Environmental Specialist

Environmental & Safety Solutions, Inc.

CLOSURE REQUEST ADDENDUM

RDX 15-11

Eddy County, New Mexico

Incident Number nAB1800557573

Prepared for:

WPX Energy Permian, LLC

Carlsbad ● Midland ● San Antonio ● Lubbock ● Hobbs ● Lafayette

SYNOPSIS

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of WPX Energy Permian, LLC (WPX), presents the following updated Closure Request Addendum (CRA) to document supplemental soil sampling activities performed to define the horizontal periphery of an inadvertent release of produced water at the RDX 15-11 (Site). Based on Site review and laboratory analytical results from recent soil sampling events, WPX is requesting No Further Action (NFA) at the Site.

The previous Closure Request (CR) and both CRA reports were denied on March 29, 2023, June 20, 2023, and July 28, 2023, respectively due to the following reason(s):

March 29, 2023

- "The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater."

June 20, 2023

- "Closure denied due to incomplete closure report. The following are missing: scaled site map/sampling diagram, description of remediation activities, photographs of the remediated site, and final sampling lab analyses."

July 28, 2023

- "Horizontal delineation submitted was incomplete and did not meet the requirements of 19.15.29.11 NMAC. The values for determination of horizontal impact are derived by either approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less. This is especially important for "on-pad" releases to ensure the release did not extend to the "off-pad"/pasture area. A visual footprint on the surface is not sufficient to assess the horizontal extent of the release. Laboratory data must be provided as evidence of delineation efforts. Any sample exceeding approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less requires additional samples for horizontal delineation.

- Continue to horizontally delineate spill to 600 mg/kg for chlorides. While vertical definition of contamination that may be acceptable is almost exclusively driven by depth to water, as determined, and as driven by Table I in rule, horizontal definition is different. The edges (horizontal definition) of a liquid release must be determined as well. The only value for determination of horizontal impact are derived by either "background" value as determined appropriate to Rule 29, or, for chloride, 600 mg/Kg in soils. This 600 mg/Kg value is discussed in detail in 19.15.29.13 D. (1).

- The remediation requirements in Table 1 19.15.29.12 NMAC are the same for all releases, whether they occur on an active production site or not (19.15.29.12(C)(2) and (3) NMAC). Remediation on an active site can be deferred in areas immediately under or around production equipment such as production tanks, wellheads, and pipelines where remediation could cause a major facility deconstruction. A major facility deconstruction is determined by the OCD on a case by case basis. The remediation, restoration, and reclamation may be deferred with OCD's written approval until the equipment is removed during other operations, or when the well or facility is plugged or abandoned, whichever comes first. For the deferral request the contamination must be fully delineated. In addition, the contamination must not pose an imminent risk to human health, the

environment, or groundwater. Deferrals are not forever and remediation must be completed in a timely fashion once the equipment is out of use.

- The responsible party shall restore the impacted surface area of a release occurring on a developed well pad, central tank battery, drilling site, compressor site or other exploration, development, production or storage sites to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC.

- Per 19.15.29.12(D) Closure requirements for sampling must be met. This includes sampling notifications two business days prior to conducting final sampling. Also, the responsible party may submit a composite and grab sample plan for the division's review and approval separately or with the remediation plan. Alternately, without division approval, the responsible party may elect to perform a composite and grab sample plan of the remediated area where each composite sample is not representative of more than 200 square feet."

SITE LOCATION AND RELEASE BACKGROUND

The Site is located in Unit F, Section 15, Township 26 South, Range 30 East, in Eddy County, New Mexico (32.043733284° N, 103.872277755° W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM) (**Figure 1** in **Appendix A**).

On December 21, 2017, a water knockout failure caused approximately 75 barrels (bbls) of produced water to be released into an earthen berm containment. Vacuum trucks were immediately dispatched and recovered approximately 65 bbls of fluid. WPX reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141), which was received by the NMOCD on January 3, 2018, and was subsequently assigned Incident Number nAB1800557573. **Figure 2** in **Appendix A** depicts the observed subject release footprint mapped by WPX, hereafter referred to as the Area of Concern (AOC).

SITE CHARACTERIZATION AND CLOSURE CRITERIA

Etech characterized the Site according to Table I, 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) considering depth to groundwater and the proximity to:

- Any continuously flowing watercourse or any other significant watercourse;
- Any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark);
- An occupied permanent residence, school, hospital, institution or church;
- A spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes;
- Any freshwater well or spring;
- Incorporated municipal boundaries or a defined municipal fresh water well field covered under a municipal ordinance;
- A wetland;
- A subsurface mine;
- An unstable area (i.e. high karst potential); and
- A 100-year floodplain.

Upon submittal of the CR, the nearest permitted water well with depth to water data was United States Geological Survey (USGS) well 320355103524001, located approximately 1.5 miles north of the Site. USGS well 320355103524001 has a reported depth of water 163.83 feet below ground surface (bgs) from

1959. Due to the distance of the well from the Site and the age of the groundwater measurement (greater than 0.5 miles and greater than 25 years old), NMOCD determined the data to be insufficient to assist with the regional groundwater depth estimate at the Site.

Since the submittal of the CR, on July 28, 2022, Atkins Engineering Associates, Inc. (Atkins) advanced a soil boring (TW-1), filed under New Mexico State of the Engineers (NMOSE) well C-04655, located approximately 0.5 miles northwest of the Site. Using a truck mounted drill rig equipped with hollow stem auger, the soil boring was advanced to a total depth of 55 feet bgs. No fluids were observed throughout the drilling process nor after a 72-hour observation period. Following the observation period, the boring was plugged and abandoned according to the appropriate regulations. Although soil boring TW-1 was only advanced to 55 feet bgs, WPX believes regional depth to groundwater at the Site to be greater than 100 feet bgs based on seven nearby soil borings advanced to depths greater than 100 feet bgs by WPX.

The closest of seven soil borings (MW-1) was drilled by Talon LPE on December 16, 2020, and is located approximately 0.6 miles west southwest on WPX well pad RDX 16-25. A truck mounted drill rig equipped with hollow stem auger advanced the soil boring to a total depth of 110 feet bgs. No fluids were observed throughout the drilling process nor after a 72-hour observation period. Following the observation period, the boring was plugged and abandoned according to the appropriate regulations. The remaining six borings were conducted similarly and yielded no evidence of groundwater within 100 feet of ground surface. Well logs for all the referenced soil borings are provided in **Appendix B**.

All other potential receptors are not within the established buffers in NMAC 19.15.29.12. Receptor details from the site characterization are included in **Figure 1** in **Appendix A**.

Based on the results from the desktop review and further supported regional depth to groundwater at the Site, the following Closure Criteria was applied:

Constituents of Concern (COCs)	Laboratory Analytical Method	Closure Criteria†
Chloride	Environmental Protection Agency (EPA) 300.0	20,000 milligram per kilogram (mg/kg)
Total Petroleum Hydrocarbon (TPH)	EPA 8015 M/D	2,500 mg/kg
TPH-Gasoline Range Organics (GRO) + TPH-Diesel Range Organics (DRO)	EPA 8021B	1,000 mg/kg
Benzene	EPA 8021B	10 mg/kg
Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	EPA 8021B	50 mg/kg

†*The reclamation concentration requirements of 600 mg/kg chloride and 100 mg/kg TPH apply to the top 4 feet of areas to be immediately reclaimed following remediation pursuant to NMAC 19.15.17.13*.

DELINEATION SOIL SAMPLING ACTIVITIES

On August 11, 2023, Etech advanced six delineation boreholes (BH01 through BH06) via hand auger to assist with defining the horizontal periphery of the AOC. Delineation activities were driven by field screening soil for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. A total of two samples were collected from each delineation soil sample location, representing the highest observed field screening concentrations and the greatest depth. Field screening results and soil descriptions are included on soil sampling logs shown in **Appendix C**. The locations of the delineation soil samples are shown in **Figure 2** in **Appendix A**. Photographic documentation was conducted during delineation activities is included in **Appendix D**.

The delineation soil samples were placed directly into lab provided pre-cleaned jars, packed with minimal void space, labeled, and immediately placed on ice. The soil samples were transported under strict

chain-of-custody procedures, to Envirotech Laboratories (Envirotech) in Farmington, New Mexico, for analysis of COCs.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for all delineation soil samples indicated all analyzed COCs were below the applicable Site Closure Criteria and provided sufficient horizontal delineation of the AOC. Laboratory analytical results are summarized in Table I included in **Appendix E**. The executed chain-of-custody forms and laboratory analytical reports are provided in **Appendix F**.

CLOSURE REQUEST

As requested by the NMOCD, supplemental soil sampling activities were performed to define the horizontal periphery of the AOC associated with an inadvertent release of produced water at Site. Based on the updated Site Characterization from recent depth to groundwater confirmation, regional groundwater data review, and laboratory analytical results from the recent soil sampling event, delineation soil samples indicated that all COCs were below the applicable Closure Criteria. WPX believes the completed remedial actions meet the requirements set forth in NMAC 19.15.29.13 regulations to be protective of human health, the environment and groundwater. As detailed in this updated CRA, NFA appears warranted at this time and Incident Number nAB1800557573.

If you have any questions or comments, please do not hesitate to contact Joseph Hernandez at (281) 702-2329 or joseph@etechenv.com or Anna Byers (575) 200-6754 or anna@etechenv.com. **Appendix G** provides correspondence email notification receipts associated with the subject release. Previous remediation activities and soil sample analytical results for the subject release can be referenced in the original CR in **Appendix H**.

Sincerely,

Etech Environmental and Safety Solutions, Inc.

Anna Byers
Senior Geologist

Joseph S. Hernandez
Senior Managing Geologist

cc: Jim Raley, WPX
New Mexico Oil Conservation Division
Bureau of Land Management

Appendices:

APPENDIX A

Figures

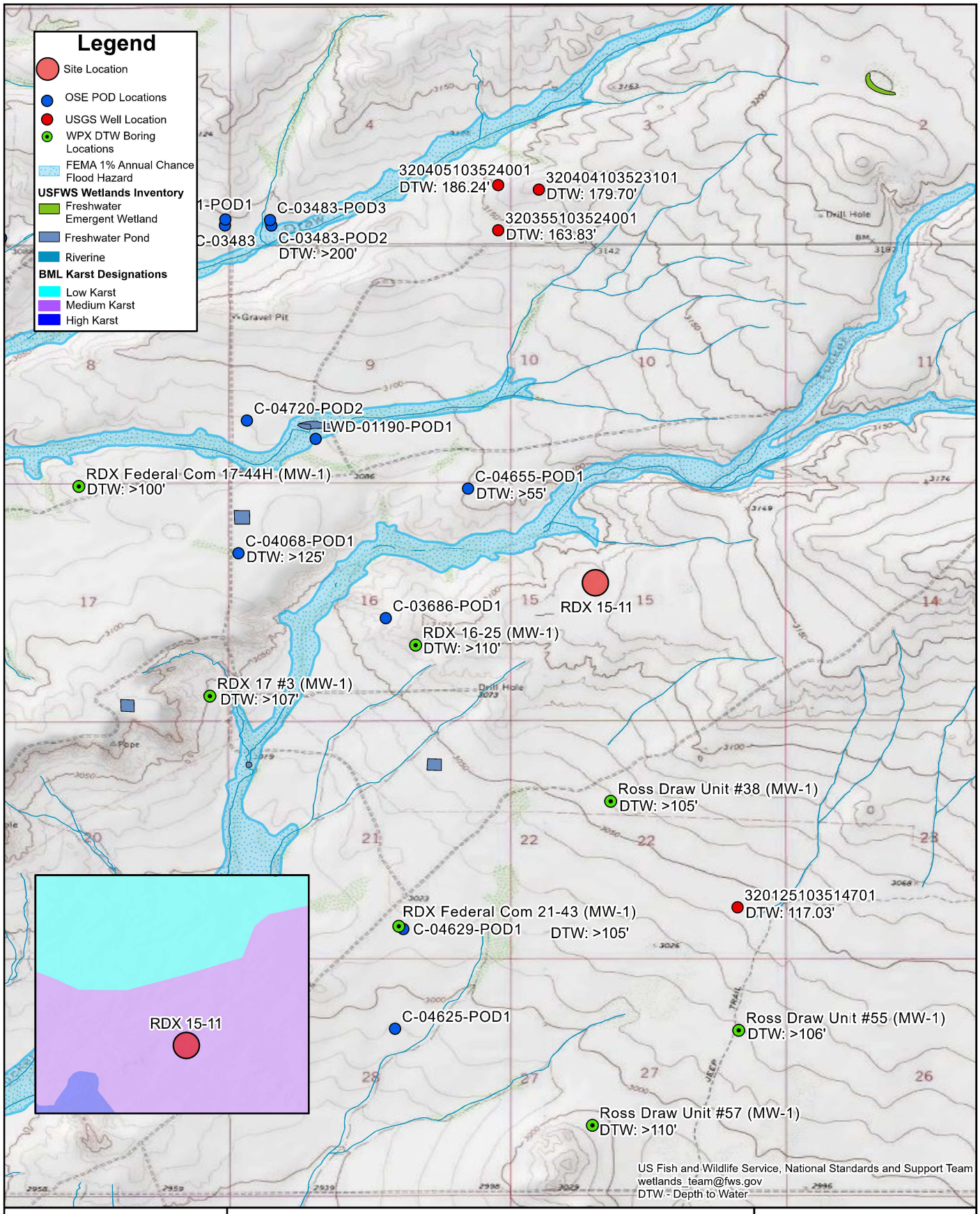


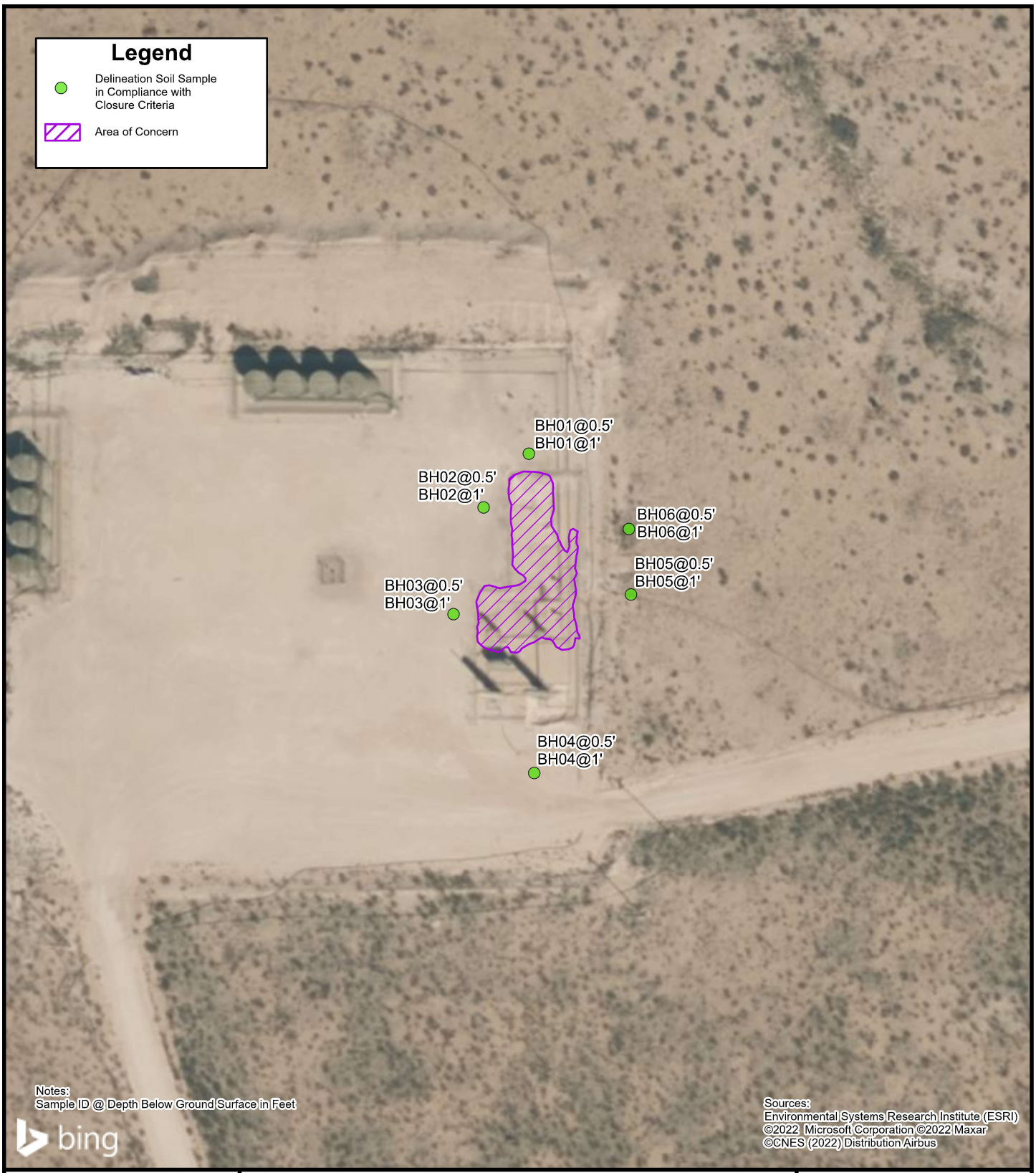
FIGURE 1

Site Map

WPX ENERGY PERMIAN, LLC
RDX 15-11
Unit F Sec 15 T26S R30E
Eddy County, New Mexico

N

0 1,500 3,000 Feet



eTECH

FIGURE 2

Delineation Soil Sample Locations

WPX ENERGY PERMIAN, LLC
RDX 15-11
Unit F Sec 15 T26S R30E
Eddy County, New Mexico

N

0 50 100 Feet

APPENDIX B

Referenced Well Records

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 320355103524001

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 320355103524001 26S.30E.08.11421

Eddy County, New Mexico
Latitude 32°03'55", Longitude 103°52'40" NAD27
Land-surface elevation 3,147 feet above NAVD88
The depth of the well is 200 feet below land surface.
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.
This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
1948-12-15		D	62610		2973.44	NGVD29	P	Z			A
1948-12-15		D	62611		2975.04	NAVD88	P	Z			A
1948-12-15		D	72019	171.96			P	Z			A
1959-02-18		D	62610		2981.57	NGVD29	1	Z			A
1959-02-18		D	62611		2983.17	NAVD88	1	Z			A
1959-02-18		D	72019	163.83			1	Z			A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Status	P	Pumping
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

Questions or Comments
Automated retrievals
Help

Data Tips
Explanation of terms
Subscribe for system changes
News

U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2023-06-05 13:37:47 EDT
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WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

OSE DII AUG 8 2022 AM 10:17

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD 1 (TW-1)	N/A	C-4655

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Devon Energy	575-748-1838

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
6488 7 Rivers Hwy	Artesia	NM	88210

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	2	58.26	N
	LONGITUDE	103	52	48.37	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

NW NE NE Sec.16 T26S R30E, NMPM

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
7/28/2022	7/28/2022	Temporary Well	±55	N/A

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): N/A

DATE STATIC MEASURED: 7/28/22, 8/2/22

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	55	±6.5	Boring-HSA	--	--	--	--

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO. C-4655	POD NO. 1	TRN NO. 729332
LOCATION 26S.30E.16.1.2.2.	WELL TAG ID NO. —	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	4	4	Sand, Fine-grained, poorly graded, Brown	Y ✓ N	
4	48	44	Sand, Fine-grained, poorly graded, with caliche Tan and white	Y ✓ N	
48	55	7	Sand, Fine-grained, poorly graded, Tan Brown	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Temporary well material removed and soil boring backfilled using drill cuttings from total depth to ten feet below ground surface(bgs), then hydrated bentonite chips ten feet bgs to surface.

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PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Shane Eldridge, Cameron Pruitt

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jack Atkins — Jackie D. Atkins — 8/4/2022

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO. C-4655	POD NO. 1	TRN NO. 729332	
LOCATION 26S.30E.16.1.2.2.		WELL TAG ID NO. —	PAGE 2 OF 2

Atkins ENGINEERING ASSOCIATES INC.
2904 W 2nd St.
Roswell, NM 88201
voice: 575.624.2420
fax: 575.624.2421
www.atkinseng.com

August 4, 2022

DII-NMOSE
1900 W 2nd Street
Roswell, NM 88201

Hand Delivered to the DII Office of the State Engineer

Re: Well Record C-4655 Pod1

To whom it may concern:

Attached please find a well log & record and a plugging record, in duplicate, for a one (1) soil borings, C-4655 Pod1.

If you have any questions, please contact me at 575.499.9244 or lucas@atkinseng.com.

Sincerely,

Lucas Middleton

Enclosures: as noted above

OSE DII AUG 8 2022 AM 10:17

HRL COMPLIANCE SOLUTIONS

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-1		Location: RDX 16-25	
Date: 12/10/2020		Client: WPX Energy	
Drilling Method: Air Rotary	Sampling Method: None	Logged By: J. Linn, PG	Drilled By: Talon LPE
Gravel Pack Type: 10/20 sand	Gravel Pack Depth Interval: 3 bags	Seal Type: None / Seal Depth Interval: None	Latitude: 32.0399004
Casing Type: PVC / Diameter: 2-inch / Depth Interval: 0-105 feet bgs		Boring Total Depth (ft. BGS): 110	Longitude: -103.8833368
Screen Type: PVC / Slot: 0.010-inch / Diameter: 2-inch / Depth Interval: 105-110 ft		Well Total Depth (ft. BGS): 110	Depth to Water (ft. BTOC): > 110 / DTW Date: 12/16/2020

Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks	Well Completion
0	NM	L	D	N	N	NM	SW	NS	Pale orange to pink tan well graded sand with silt	
5										
10										
15										
20										
25	NM	L	D	N	N	NM	SP	NS	Pale pinky orange poorly graded fine sand	
30										
35										
40	NM	L	D	N	N	NM	SW	NS	Orange to pale red well graded sand with gravel	
45										
50	NM	L	D	N	N	NM	SP	NS	Pale pinky orange poorly graded fine sand	
55										
60	NM	L	D	N	N	NM	SP	NS	Pale pinky orange poorly graded fine sand with minor medium and coarse sand - TD: 110' bgs	
65										
70										
75										
80										
85										
90										
95										
100										
105										
110										

HRL COMPLIANCE SOLUTIONS

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-1		Location: Ross Draw Unit #38	
Date: 12/8/2020		Client: WPX Energy	
Drilling Method: Air Rotary	Sampling Method: None	Logged By: J. Linn, PG	Drilled By: Talon LPE
Gravel Pack Type: 10/20 Sand	Gravel Pack Depth Interval: 3 Bags	Seal Type: None / Seal Depth Interval: None	Latitude: 32.030300
Casing Type: PVC / Diameter: 2-inch / Depth Interval: 0-100 feet bgs		Boring Total Depth (ft. BGS): 105	Longitude: -103.871338
Screen Type: PVC / Slot: 0.010-inch / Diameter: 2-inch / Depth Interval: 100-105 ft		Well Total Depth (ft. BGS): 105	Depth to Water (ft. BTOC): > 105 / DTW Date: 12/16/2020

Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks	Well Completion
0	NM	L	D	N	N	NM	SW	NS	Pale orange/pale pink to buff colored fine sand with minor medium and coarse sand	
5										
10										
15										
20	NM	L	D	N	N	NM	SP	NS	Pale orange/pale pink poorly graded fine sand	
25										
30										
35	NM	L	D	N	N	NM	SP	NS	Tan/pale brown/pale orange poorly graded fine sand	
40										
45										
50										
55										
60										
65										
70	NM	L	D	N	N	NM	SP	NS	Brick red brown poorly graded fine sand	
75										
80										
85										
90										
95										
100	NM	L	D	N	N	NM	SP	NS	Tan/pale brown/pale orange poorly graded fine sand - TD 105' BGS	

HRL COMPLIANCE SOLUTIONS

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-1		Location: RDX 17 #3	
Date: 12/8/2020		Client: WPX Energy	
Drilling Method: Air Rotary	Sampling Method: None	Logged By: J. Linn, PG	Drilled By: Talon LPE
Gravel Pack Type: 10/20 Sand	Gravel Pack Depth Interval: 3 Bags	Seal Type: None / Seal Depth Interval: None	Latitude: 32.036765
Casing Type: PVC / Diameter: 2-inch / Depth Interval: 0-102 feet bgs		Boring Total Depth (ft. BGS): 107	Longitude: -103.895993
Screen Type: PVC / Slot: 0.010-inch / Diameter: 2-inch / Depth Interval: 102-107 ft		Well Total Depth (ft. BGS): 107	Depth to Water (ft. BTOC): > 107 / DTW Date: 12/16/2020

Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks	Well Completion
0	NM	L	D	N	N	NM	SP	NS	Pale orange poorly graded fine sand	
5										
10										
15										
20										
25										
30	NM	L	D	N	N	NM	SP	NS	Same as above with slight increase in coarse sand and gravel	
35										
40	NM	L	D	N	N	NM	SP	NS	Pale orange poorly graded fine sand with very slight silt	
45										
50										
55	NM	L	D	N	N	NM	SP	NS	Pale orange poorly graded fine sand	
60	NM	L	D	N	N	NM	SW	NS	Pale orange well graded fine sand	
65	NM	M	SL M	N	N	NM	SM	NS	Pale red orange clayey silty fine sand with minor coarse sand and gravel	
70										
75										
80										
85										
90	NM	L	SL M	N	N	NM	SP	NS	Pale orange poorly sorted fine sand - TD 107' BGS	
95										
100										
105										

HRL COMPLIANCE SOLUTIONS

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-1		Location: RDX Federal Com 21-43	
Date: 12/9/2020		Client: WPX Energy	
Drilling Method: Air Rotary	Sampling Method: None	Logged By: J. Linn, P.G.	Drilled By: Talon LPE
Gravel Pack Type: 10/20 Sand	Gravel Pack Depth Interval: 3 Bags	Seal Type: None / Seal Depth Interval: None	Latitude: 32.022571
Casing Type: PVC / Diameter: 2-inch / Depth Interval: 0-100 feet bgs		Boring Total Depth (ft. BGS): 110	Longitude: -103.884371
Screen Type: PVC / Slot: 0.010-inch / Diameter: 2-inch / Depth Interval: 100 - 105 ft		Well Total Depth (ft. BGS): 105	Depth to Water (ft. BTOC): > 105 / DTW Date: 12/16/2020

Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks	Well Completion
0	NM	L	D	N	N	NM	SP	NS	Pale orange to tan poorly graded fine sand	
5										
10										
15										
20	NM	H	D	N	N	NM	CL	NS	Pale orange/tan/pale red clay, dry, with silt, fine sand, and minor caliche	
25	NM	L	D	N	N	NM	SP	NS	Pale orange to pale red poorly graded fine sand	
30										
35										
40										
45										
50	NM	L	D	N	N	NM	SP	NS	Golden yellow poorly graded fine sand with minor silt and clay	
55										
60										
65	NM	L	D	N	N	NM	SP	NS	Pale orange to pale red poorly graded fine sand with minor silt/clay	
70										
75										
80	NM	M	D	N	N	NM	SC	NS	Buff to orange color fine sand with medium sand and clay	
85										
90										
95	NM	H	D	N	N	NM	CL	NS	Brown orange clay with silt and fine sand	
100	NM	H	D	N	N	NM	SC	NS	Golden yellow and buff colored clay with fine sand - TD Boring: 110' BGS; Sand 110' - 105' BGS	
105										

HRL COMPLIANCE SOLUTIONS

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-1			Location: RDX Federal Com 17-44H
Date: 12/8/2020			Client: WPX Energy
Drilling Method: Air Rotary	Sampling Method: None	Logged By: J. Linn, PG	Drilled By: Talon LPE
Gravel Pack Type: 10/20 Sand	Gravel Pack Depth Interval: 3 Bags	Seal Type: None / Seal Depth Interval: None	Latitude: 32.049656
Casing Type: PVC / Diameter: 2-inch / Depth Interval: 0-105 ft bgs		Boring Total Depth (ft. BGS): 110	Longitude: -103.904054
Screen Type: PVC / Slot: 0.010-inch / Diameter: 2-inch / Depth Interval: 105 - 110 ft		Well Total Depth (ft. BGS): 110	Depth to Water (ft. BTOC): > 110 / DTW Date: 12/16/2020

Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks	Well Completion
0	NM	L	D	N	N	NM	CE	NS	Buff to pale pink colored caliche	
5										
10										
15										
20										
25										
30										
35										
40										
45	NM	L	D	N	N	NM	SW	NS	Pinky orange well graded sand with minor silt	
50										
55										
60										
65	NM	L	D	N	N	NM	SP	NS	Pinky pale brown orange poorly graded fine sand with minor silt	
70										
75										
80	NM	L	D	N	N	NM	SW-SM SW-SC	NS	Pinky brown orange well-graded sand with silt and clay	
85										
90										
95	NM	L	D	N	N	NM	SP	NS	Pinky pale brown orange poorly graded fine sand with minor silt - TD: 110' bgs	
100										
105										

HRL COMPLIANCE SOLUTIONS

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-1		Location: Ross Draw Unit #55	
Date: 12/9/2020		Client: WPX Energy	
Drilling Method: Air Rotary	Sampling Method: None	Logged By: J. Linn, PG	Drilled By: Talon LPE
Gravel Pack Type: 10/20 Sand	Gravel Pack Depth Interval: 3 Bags	Seal Type: None / Seal Depth Interval: None	Latitude: 32.016165
Casing Type: PVC / Diameter: 2-inch / Depth Interval: 0-101'7"		Boring Total Depth (ft. BGS): 106'7"	Longitude: -103.86346
Screen Type: PVC / Slot: 0.010-inch / Diameter: 2-inch / Depth Interval: 101'7" - 106'7"		Well Total Depth (ft. BGS): 106'7"	Depth to Water (ft. BTOC): >106' 7" / DTW Date: 12/16/2020

Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks	Well Completion
0	NM	L	D	N	N	NM	SP	NS	Pale pink to buff colored poorly graded sand with minor silt	
5										
10										
15										
20	NM	L	D	N	N	NM	SW	NS	Pale tan orange well graded fine sand with minor medium and coarse sand	
25										
30										
35	NM	L	D	N	N	NM	SP	NS	Pale orange brown poorly graded fine sand with minor gravel	
40										
45										
50										
55										
60										
65	NM	L	D	N	N	NM	SP	NS	Grey poorly graded fine sand with minor gravel	
70										
75										
80										
85										
90	NM	L	D	N	N	NM	SP	NS	Darker grey poorly graded fine sand with minor silt and minor medium sand	
95										
100	NM	M	D	N	N	NM	SC	NS	Dark grey fine sand with moderate silt and clay - TD 106'7"	
106'7"										

HRL COMPLIANCE SOLUTIONS

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-1		Location: Ross Draw Unit #57	
Date: 12/9/2020		Client: WPX Energy	
Drilling Method: Air Rotary	Sampling Method: None	Logged By: J. Linn, PG	Drilled By: Talon LPE
Gravel Pack Type: 10/20 Sand	Gravel Pack Depth Interval: 3 Bags	Seal Type: None / Seal Depth Interval: None	Latitude: 32.01032
Casing Type: PVC / Diameter: 2-inch / Depth Interval: 0-105 feet bgs		Boring Total Depth (ft. BGS): 110	Longitude: -103.87246
Screen Type: PVC / Slot: 0.010-inch / Diameter: 2-inch / Depth Interval: 105-110 ft		Well Total Depth (ft. BGS): 110	Depth to Water (ft. BTOC): > 110 / DTW Date: 12/16/2020

Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks	Well Completion
0	NM	L/M	D	N	N	NM	SM	NS	Tan/pale orange/pale brown poorly graded fine sand	
5										
10										
15										
20										
25										
30										
35										
40	NM	M	D	N	N	NM	SW	NS	Hard, dry pale pink orange well graded sand with gravel	
45										
50	NM	M	D	N	N	NM	SM	NS	Pale orange red tan silty fine sand	
55										
60	NM	L	D	N	N	NM	SW	NS	Dark brown greyish well graded sand	
65										
70	NM	L/M	D to SL M	N	N	NM	SW	NS	Grey well graded sand	
75										
80										
85										
90										
95										
100	NM	L/M	D	N	N	NM	SM	NS	Tan/pale orange/pale brown poorly graded fine sand - TD 110' bgs	
105										

APPENDIX C

Soil Sampling Logs

eTECH

	Sample Name: BH01	Date: 08/11/2023
	Site Name: RDX 15-11	
	Incident Number: nAB1800557573	
	Job Number: 18268	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: GM	Method: Backhoe
Site Coordinates: 32.043733284, 103.872277755	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (feet bgs)	Depth (feet bgs)	USCS/Rock Symbol	Lithologic Descriptions/Notes
Dry	208	0.1	No	BH01	0.5	0	CCHE	(0.1') Caliche Pad, dry, tan, fine to coarse grain, with abundant gravel, no stain, no odor.
Dry	208	0.0	No	BH01	1	1		

Total Depth

eTECH

	Sample Name: BH02	Date: 08/11/2023
	Site Name: RDX 15-11	
	Incident Number: nAB1800557573	
	Job Number: 18268	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: GM	Method: Backhoe
Site Coordinates: 32.043733284, 103.872277755	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (feet bgs)	Depth (feet bgs)	USCS/Rock Symbol	Lithologic Descriptions/Notes
						0	CCHE	(0-1') Caliche Pad, dry, tan, fine to coarse grain, with abundant gravel, no stain, no odor.
Dry	408	0.0	No	BH02	0.5			
Dry	408	0.1	No	BH02	1	1		
						Total Depth		

eTECH

	Sample Name: BH03	Date: 08/11/2023
	Site Name: RDX 15-11	
	Incident Number: nAB1800557573	
	Job Number: 18268	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: GM	Method: Backhoe
Site Coordinates: 32.043733284, 103.872277755	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (feet bgs)	Depth (feet bgs)	USCS/Rock Symbol	Lithologic Descriptions/Notes
Dry	<124	0.0	No	BH03	0.5	0	CCHE	(0-1') Caliche Pad, dry, tan, fine to coarse grain, with abundant gravel, no stain, no odor.
Dry	<124	0.0	No	BH03	1	1		

Total Depth

eTECH

	Sample Name: BH04	Date: 08/11/2023
	Site Name: RDX 15-11	
	Incident Number: nAB1800557573	
	Job Number: 18268	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: GM	Method: Backhoe
Site Coordinates: 32.043733284, 103.872277755	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (feet bgs)	Depth (feet bgs)	USCS/Rock Symbol	Lithologic Descriptions/Notes
						0	CCHE	(0-1') Caliche Pad, dry, tan, fine to coarse grain, with abundant gravel, no stain, no odor.
Dry	<124	0.1	No	BH04	0.5			
Dry	<124	0.0	No	BH04	1	1		

Total Depth

eTECH

	Sample Name: BH05	Date: 08/11/2023
	Site Name: RDX 15-11	
	Incident Number: nAB1800557573	
	Job Number: 18268	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: GM	Method: Backhoe
Site Coordinates: 32.043733284, 103.872277755	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (feet bgs)	Depth (feet bgs)	USCS/Rock Symbol	Lithologic Descriptions/Notes
						0	SP-SM	(0-1') SAND, dry, brown, very fine to fine grain poorly graded with trace silt and some organics, no stain, no odor.
Dry	<124	0.0	No	BH05	0.5			
Dry	<124	0.0	No	BH05	1	1		

Total Depth

eTECH

	Sample Name: BH06	Date: 08/11/2023
	Site Name: RDX 15-11	
	Incident Number: nAB1800557573	
	Job Number: 18268	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: GM	Method: Backhoe
Site Coordinates: 32.043733284, 103.872277755	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (feet bgs)	Depth (feet bgs)	USCS/Rock Symbol	Lithologic Descriptions/Notes
Dry	<124	0.0	No	BH06	0.5	0	SP-SM	(0-1') SAND, dry, brown, very fine to fine grain poorly graded with trace silt and some organics, no stain, no odor.
Dry	<124	0.0	No	BH06	1	1		

Total Depth

APPENDIX D

Photographic Log

PHOTOGRAPHIC LOG
WPX Energy Permian, LLC
RDX 15-11
Incident Number nAB1800557573

Photograph 1 **Date: 08/11/2023**
Description: Southern view of horizontal delineation activities

Photograph 2 **Date: 08/11/2023**
Description: Eastern view of horizontal delineation activites

Photograph 3 **Date: 08/11/2023**
Description: Western view of horizontal delineation activities

Photograph 4 **Date: 08/11/2023**
Description: Southeastern view of horizontal delineation activities

APPENDIX E

Tables

eTECH

Table 1
SOIL SAMPLE ANALYTICAL RESULTS
WPX Energy Permian, LLC
RDX 15-11
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			**10**	**50**	**NE**	**NE**	**NE**	**1,000**	**2,500**	**20,000**
Delineation Soil Samples - Incident Number nAB1800557573										
BH01	08/11/2023	0.5	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	274
BH01	08/11/2023	1	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	273
BH02	08/11/2023	0.5	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	48.9
BH02	08/11/2023	1	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	51.5
BH03	08/11/2023	0.5	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	32.4
BH03	08/11/2023	1	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	26.8
BH04	08/11/2023	0.5	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	24.7
BH04	08/11/2023	1	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	28.5
BH05	08/11/2023	0.5	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	66.1
BH05	08/11/2023	1	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	66.5
BH06	08/11/2023	0.5	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	21.5
BH06	08/11/2023	1	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0

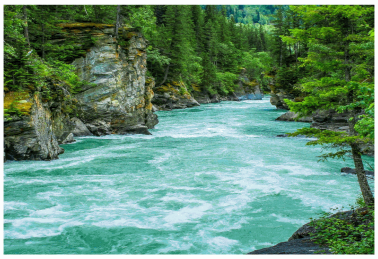
Notes:
bgs: below ground surface
mg/kg: milligrams per kilogram
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics
TPH: Total Petroleum Hydrocarbon
NMOCD: New Mexico Oil Conservation Division
NMAC: New Mexico Administrative Code
Text in "grey" represents excavated soil samples
*Concentrations in **bold** exceed the NMOCD Table I Closure Criteria and/or Reclamation Standard for Soils Impacted by a Release*

APPENDIX F

Laboratory Analytical Reports & Chain-of-Custody Documentation

Report to:

Anna Byers



5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com

NELAP ACCREDITED TNI LABORATORY

envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

WPX Energy - Carlsbad

Project Name: RDX 15-11

Work Order: E308092

Job Number: 01058-0007

Received: 8/14/2023

Revision: 2

Report Reviewed By:

Walter Hinchman
Laboratory Director
8/18/23

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.

Date Reported: 8/18/23

Anna Byers
5315 Buena Vista Dr
Carlsbad, NM 88220

Project Name: RDX 15-11
Workorder: E308092
Date Received: 8/14/2023 8:15:00AM

Anna Byers,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 8/14/2023 8:15:00AM, under the Project Name: RDX 15-11.

The analytical test results summarized in this report with the Project Name: RDX 15-11 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
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West Texas Midland/Odessa Area
Rayny Hagan
Technical Representative
Office: 505-421-LABS(5227)

Envirotech Web Address: www.envirotech-inc.com

Table of Contents

Sample Summary

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	08/18/23 14:04

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
BH01 0.5'	E308092-01A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH01 1'	E308092-02A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 2:04:11PM

BH01 0.5'

E308092-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333019
Benzene	ND	0.0250	1	08/14/23	08/15/23	
Ethylbenzene	ND	0.0250	1	08/14/23	08/15/23	
Toluene	ND	0.0250	1	08/14/23	08/15/23	
o-Xylene	ND	0.0250	1	08/14/23	08/15/23	
p,m-Xylene	ND	0.0500	1	08/14/23	08/15/23	
Total Xylenes	ND	0.0250	1	08/14/23	08/15/23	
Surrogate: Bromofluorobenzene		*103 %*	*70-130*	*08/14/23*	*08/15/23*	
Surrogate: 1,2-Dichloroethane-d4		*99.7 %*	*70-130*	*08/14/23*	*08/15/23*	
Surrogate: Toluene-d8		*98.2 %*	*70-130*	*08/14/23*	*08/15/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333019
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/14/23	08/15/23	
Surrogate: Bromofluorobenzene		*103 %*	*70-130*	*08/14/23*	*08/15/23*	
Surrogate: 1,2-Dichloroethane-d4		*99.7 %*	*70-130*	*08/14/23*	*08/15/23*	
Surrogate: Toluene-d8		*98.2 %*	*70-130*	*08/14/23*	*08/15/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333017
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/16/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/16/23	
Surrogate: n-Nonane		*95.4 %*	*50-200*	*08/14/23*	*08/16/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333045
Chloride	**274**	20.0	1	08/16/23	08/17/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 2:04:11PM

BH01 1'

E308092-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333019
Benzene	ND	0.0250	1	08/14/23	08/15/23	
Ethylbenzene	ND	0.0250	1	08/14/23	08/15/23	
Toluene	ND	0.0250	1	08/14/23	08/15/23	
o-Xylene	ND	0.0250	1	08/14/23	08/15/23	
p,m-Xylene	ND	0.0500	1	08/14/23	08/15/23	
Total Xylenes	ND	0.0250	1	08/14/23	08/15/23	
Surrogate: Bromofluorobenzene		*99.9 %*	*70-130*	*08/14/23*	*08/15/23*	
Surrogate: 1,2-Dichloroethane-d4		*96.5 %*	*70-130*	*08/14/23*	*08/15/23*	
Surrogate: Toluene-d8		*99.9 %*	*70-130*	*08/14/23*	*08/15/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333019
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/14/23	08/15/23	
Surrogate: Bromofluorobenzene		*99.9 %*	*70-130*	*08/14/23*	*08/15/23*	
Surrogate: 1,2-Dichloroethane-d4		*96.5 %*	*70-130*	*08/14/23*	*08/15/23*	
Surrogate: Toluene-d8		*99.9 %*	*70-130*	*08/14/23*	*08/15/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333017
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/16/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/16/23	
Surrogate: n-Nonane		*95.0 %*	*50-200*	*08/14/23*	*08/16/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333045
Chloride	**273**	20.0	1	08/16/23	08/17/23	

QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 2:04:11PM

Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2333019-BLK1)									Prepared: 08/14/23 Analyzed: 08/15/23
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	*0.505*		*0.500*		*101*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.491*		*0.500*		*98.1*	*70-130*			
Surrogate: Toluene-d8	*0.507*		*0.500*		*101*	*70-130*			
LCS (2333019-BS1)									Prepared: 08/14/23 Analyzed: 08/15/23
Benzene	2.52	0.0250	2.50		101	70-130			
Ethylbenzene	2.30	0.0250	2.50		91.9	70-130			
Toluene	2.39	0.0250	2.50		95.8	70-130			
o-Xylene	2.42	0.0250	2.50		96.9	70-130			
p,m-Xylene	4.75	0.0500	5.00		95.0	70-130			
Total Xylenes	7.17	0.0250	7.50		95.6	70-130			
Surrogate: Bromofluorobenzene	*0.509*		*0.500*		*102*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.491*		*0.500*		*98.2*	*70-130*			
Surrogate: Toluene-d8	*0.504*		*0.500*		*101*	*70-130*			
Matrix Spike (2333019-MS1)				**Source: E308087-03**					Prepared: 08/14/23 Analyzed: 08/15/23
Benzene	2.63	0.0250	2.50	ND	105	48-131			
Ethylbenzene	2.40	0.0250	2.50	ND	96.1	45-135			
Toluene	2.48	0.0250	2.50	ND	99.1	48-130			
o-Xylene	2.59	0.0250	2.50	ND	103	43-135			
p,m-Xylene	5.06	0.0500	5.00	ND	101	43-135			
Total Xylenes	7.65	0.0250	7.50	ND	102	43-135			
Surrogate: Bromofluorobenzene	*0.512*		*0.500*		*102*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.492*		*0.500*		*98.4*	*70-130*			
Surrogate: Toluene-d8	*0.507*		*0.500*		*101*	*70-130*			
Matrix Spike Dup (2333019-MSD1)				**Source: E308087-03**					Prepared: 08/14/23 Analyzed: 08/15/23
Benzene	2.65	0.0250	2.50	ND	106	48-131	0.909	23	
Ethylbenzene	2.42	0.0250	2.50	ND	96.6	45-135	0.498	27	
Toluene	2.49	0.0250	2.50	ND	99.5	48-130	0.403	24	
o-Xylene	2.60	0.0250	2.50	ND	104	43-135	0.502	27	
p,m-Xylene	5.08	0.0500	5.00	ND	102	43-135	0.345	27	
Total Xylenes	7.68	0.0250	7.50	ND	102	43-135	0.398	27	
Surrogate: Bromofluorobenzene	*0.505*		*0.500*		*101*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.495*		*0.500*		*99.0*	*70-130*			
Surrogate: Toluene-d8	*0.501*		*0.500*		*100*	*70-130*			

QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 2:04:11PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2333019-BLK1)									Prepared: 08/14/23 Analyzed: 08/15/23
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	*0.505*		*0.500*		*101*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.491*		*0.500*		*98.1*	*70-130*			
Surrogate: Toluene-d8	*0.507*		*0.500*		*101*	*70-130*			
LCS (2333019-BS2)									Prepared: 08/14/23 Analyzed: 08/15/23
Gasoline Range Organics (C6-C10)	49.8	20.0	50.0		99.6	70-130			
Surrogate: Bromofluorobenzene	*0.501*		*0.500*		*100*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.479*		*0.500*		*95.8*	*70-130*			
Surrogate: Toluene-d8	*0.514*		*0.500*		*103*	*70-130*			
Matrix Spike (2333019-MS2)				**Source: E308087-03**					Prepared: 08/14/23 Analyzed: 08/15/23
Gasoline Range Organics (C6-C10)	48.7	20.0	50.0	ND	97.5	70-130			
Surrogate: Bromofluorobenzene	*0.506*		*0.500*		*101*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.483*		*0.500*		*96.5*	*70-130*			
Surrogate: Toluene-d8	*0.514*		*0.500*		*103*	*70-130*			
Matrix Spike Dup (2333019-MSD2)				**Source: E308087-03**					Prepared: 08/14/23 Analyzed: 08/15/23
Gasoline Range Organics (C6-C10)	52.1	20.0	50.0	ND	104	70-130	6.67	20	
Surrogate: Bromofluorobenzene	*0.513*		*0.500*		*103*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.471*		*0.500*		*94.2*	*70-130*			
Surrogate: Toluene-d8	*0.507*		*0.500*		*101*	*70-130*			

QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 2:04:11PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: KM

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2333017-BLK1)									Prepared: 08/14/23 Analyzed: 08/16/23
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	*47.9*		*50.0*		*95.8*	*50-200*			
LCS (2333017-BS1)									Prepared: 08/14/23 Analyzed: 08/16/23
Diesel Range Organics (C10-C28)	239	25.0	250		95.5	38-132			
Surrogate: n-Nonane	*48.5*		*50.0*		*97.0*	*50-200*			
Matrix Spike (2333017-MS1)				**Source: E308086-03**					Prepared: 08/14/23 Analyzed: 08/16/23
Diesel Range Organics (C10-C28)	242	25.0	250	ND	96.8	38-132			
Surrogate: n-Nonane	*47.6*		*50.0*		*95.2*	*50-200*			
Matrix Spike Dup (2333017-MSD1)				**Source: E308086-03**					Prepared: 08/14/23 Analyzed: 08/16/23
Diesel Range Organics (C10-C28)	243	25.0	250	ND	97.0	38-132	0.270	20	
Surrogate: n-Nonane	*48.9*		*50.0*		*97.7*	*50-200*			

QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 2:04:11PM

Anions by EPA 300.0/9056A

Analyst: BA

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2333045-BLK1)									Prepared: 08/16/23 Analyzed: 08/17/23
Chloride	ND	20.0							
LCS (2333045-BS1)									Prepared: 08/16/23 Analyzed: 08/17/23
Chloride	257	20.0	250		103	90-110			
Matrix Spike (2333045-MS1)				**Source: E308088-01**					Prepared: 08/16/23 Analyzed: 08/17/23
Chloride	1450	400	250	1170	114	80-120			
Matrix Spike Dup (2333045-MSD1)				**Source: E308088-01**					Prepared: 08/16/23 Analyzed: 08/17/23
Chloride	1560	400	250	1170	158	80-120	7.33	20	M4

QC Summary Report Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Definitions and Notes

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	08/18/23 14:04

M4	Matrix spike recovery value is suspect since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS spike recovery was acceptable.
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
DNI	Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

Client: WPX Energy Permian, LLC.	**Bill To**	Lab Use Only	TAT: 1D / 2D / 3D / Standard — 5 Day TAT
Project: RDX 15-11	Attention: Jim Raley	Lab WO#: E308092	Job Number: 01058-0007
Project Manager: Anna Byers	Address: 5315 Buena Vista Dr.		**EPA Program**: CWA / SDWA / RCRA
Address: 13000 W County Rd 100	City, State, Zip: Carlsbad, NM, 88220		
City, State, Zip_Odessa,TX, 79765	Phone: 575-885-7502		State: NM (x) / CO / UT / AZ / TX
Phone: 575-200-6754	Email: jim.raley@dvn.com		
Email: Devon-team@etechenv.com	WBS/WO: TBD		
Collected by: Gilbert Moreno	Incident ID: nAB1800557573		

Analysis and Method

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	Depth(ft.)	TPH GRO/DRO/ORO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TDS	Cation/Anion	BGDOC NM		GDOC TX		Remarks
12:40	8.11.23	S	1	BH01	1	0.5'								X				
12:50	8.11.23	S	1	BH01	2	1'								X				

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: GM

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	8.11.23	17:30	Michelle Gonzales	8-11-23	1730
Michelle Gonzales	8-12-23	2145	[signature]	8/14/23	8:15

Lab Use Only

Received on ice: (Y) / N

T1 ______ T2 ______ T3 ______

AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other ________

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech

Envirotech Analytical Laboratory

Printed: 8/14/2023 11:38:34AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.
If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	WPX Energy - Carlsbad	Date Received:	08/14/23 08:15	Work Order ID:	E308092
Phone:	(575) 200-6754	Date Logged In:	08/14/23 09:08	Logged In By:	Caitlin Mars
Email:	anna@etechenv.vom	Due Date:	08/18/23 17:00 (4 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC?	Yes	
2. Does the number of samples per sampling site location match the COC	Yes	
3. Were samples dropped off by client or carrier?	Yes	Carrier: Courier
4. Was the COC complete, i.e., signatures, dates/times, requested analyses?	Yes	
5. Were all samples received within holding time? Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this disucssion.	Yes	

Comments/Resolution

Sample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT?	Yes	

Sample Cooler

7. Was a sample cooler received?	Yes	
8. If yes, was cooler received in good condition?	Yes	
9. Was the sample(s) received intact, i.e., not broken?	Yes	
10. Were custody/security seals present?	No	
11. If yes, were custody/security seals intact?	NA	
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling	Yes	
13. If no visible ice, record the temperature. Actual sample temperature: 4°C		

Sample Container

14. Are aqueous VOC samples present?	No	
15. Are VOC samples collected in VOA Vials?	NA	
16. Is the head space less than 6-8 mm (pea sized or less)?	NA	
17. Was a trip blank (TB) included for VOC analyses?	NA	
18. Are non-VOC samples collected in the correct containers?	Yes	
19. Is the appropriate volume/weight or number of sample containers collected?	Yes	

Field Label

20. Were field sample labels filled out with the minimum information:		
Sample ID?	Yes	
Date/Time Collected?	Yes	
Collectors name?	Yes	

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved?	No	
22. Are sample(s) correctly preserved?	NA	
24. Is lab filteration required and/or requested for dissolved metals?	No	

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase?	No	
27. If yes, does the COC specify which phase(s) is to be analyzed?	NA	

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory?	No	
29. Was a subcontract laboratory specified by the client and if so who?	NA	Subcontract Lab: NA

Client Instruction

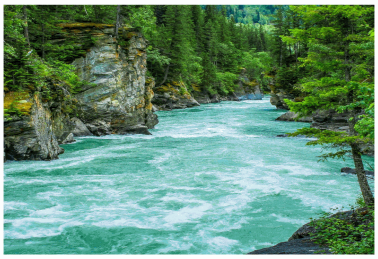
Signature of client authorizing changes to the COC or sample disposition.

Date

envirotech Inc.

Report to:

Anna Byers



5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com

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Practical Solutions for a Better Tomorrow

Analytical Report

WPX Energy - Carlsbad

Project Name:	RDX 15-11
Work Order:	E308093
Job Number:	01058-0007
Received:	8/14/2023

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
8/18/23

Date Reported: 8/18/23

Anna Byers
5315 Buena Vista Dr
Carlsbad, NM 88220

Project Name: RDX 15-11
Workorder: E308093
Date Received: 8/14/2023 8:15:00AM

Anna Byers,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 8/14/2023 8:15:00AM, under the Project Name: RDX 15-11.

The analytical test results summarized in this report with the Project Name: RDX 15-11 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
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Envirotech Web Address: www.envirotech-inc.com

Table of Contents

Sample Summary

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	08/18/23 12:02

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
BH02 0.5'	E308093-01A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH02 1'	E308093-02A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH03 0.5'	E308093-03A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH03 1'	E308093-04A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH04 0.5'	E308093-05A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH04 1'	E308093-06A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH05 0.5'	E308093-07A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH05 1'	E308093-08A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH06 0.5'	E308093-09A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.
BH06 1'	E308093-10A	Soil	08/11/23	08/14/23	Glass Jar, 2 oz.

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH02 0.5'

E308093-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/15/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/15/23	
Toluene	ND	0.0250	1	08/15/23	08/15/23	
o-Xylene	ND	0.0250	1	08/15/23	08/15/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/15/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/15/23	
Surrogate: Bromofluorobenzene		*117 %*	*70-130*	*08/15/23*	*08/15/23*	
Surrogate: 1,2-Dichloroethane-d4		*97.4 %*	*70-130*	*08/15/23*	*08/15/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/15/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/15/23	
Surrogate: Bromofluorobenzene		*117 %*	*70-130*	*08/15/23*	*08/15/23*	
Surrogate: 1,2-Dichloroethane-d4		*97.4 %*	*70-130*	*08/15/23*	*08/15/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/15/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/16/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/16/23	
Surrogate: n-Nonane		*88.6 %*	*50-200*	*08/14/23*	*08/16/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	**48.9**	20.0	1	08/16/23	08/18/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH02 1'

E308093-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/16/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/16/23	
Toluene	ND	0.0250	1	08/15/23	08/16/23	
o-Xylene	ND	0.0250	1	08/15/23	08/16/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/16/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*115 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*99.3 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*115 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*99.3 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/16/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/16/23	
Surrogate: n-Nonane		*85.5 %*	*50-200*	*08/14/23*	*08/16/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	**51.5**	20.0	1	08/16/23	08/18/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH03 0.5'

E308093-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/16/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/16/23	
Toluene	ND	0.0250	1	08/15/23	08/16/23	
o-Xylene	ND	0.0250	1	08/15/23	08/16/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/16/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*116 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*97.2 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*116 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*97.2 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/17/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/17/23	
Surrogate: n-Nonane		*88.2 %*	*50-200*	*08/14/23*	*08/17/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	**32.4**	20.0	1	08/16/23	08/18/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH03 1'

E308093-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/16/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/16/23	
Toluene	ND	0.0250	1	08/15/23	08/16/23	
o-Xylene	ND	0.0250	1	08/15/23	08/16/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/16/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*119 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*98.1 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*119 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*98.1 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/17/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/17/23	
Surrogate: n-Nonane		*88.7 %*	*50-200*	*08/14/23*	*08/17/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	**26.8**	20.0	1	08/16/23	08/18/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH04 0.5'

E308093-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/16/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/16/23	
Toluene	ND	0.0250	1	08/15/23	08/16/23	
o-Xylene	ND	0.0250	1	08/15/23	08/16/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/16/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*115 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*98.0 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*115 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*98.0 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/17/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/17/23	
Surrogate: n-Nonane		*84.4 %*	*50-200*	*08/14/23*	*08/17/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	**24.7**	20.0	1	08/16/23	08/18/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH04 1'

E308093-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/16/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/16/23	
Toluene	ND	0.0250	1	08/15/23	08/16/23	
o-Xylene	ND	0.0250	1	08/15/23	08/16/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/16/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*117 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*98.0 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*117 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*98.0 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/17/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/17/23	
Surrogate: n-Nonane		*82.5 %*	*50-200*	*08/14/23*	*08/17/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	**28.5**	20.0	1	08/16/23	08/18/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH05 0.5'

E308093-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/16/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/16/23	
Toluene	ND	0.0250	1	08/15/23	08/16/23	
o-Xylene	ND	0.0250	1	08/15/23	08/16/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/16/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*118 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*96.2 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*118 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*96.2 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/17/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/17/23	
Surrogate: n-Nonane		*86.3 %*	*50-200*	*08/14/23*	*08/17/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	**66.1**	20.0	1	08/16/23	08/18/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH05 1'

E308093-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/16/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/16/23	
Toluene	ND	0.0250	1	08/15/23	08/16/23	
o-Xylene	ND	0.0250	1	08/15/23	08/16/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/16/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*116 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*99.7 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*116 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*99.7 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/17/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/17/23	
Surrogate: n-Nonane		*89.4 %*	*50-200*	*08/14/23*	*08/17/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	**66.5**	20.0	1	08/16/23	08/18/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH06 0.5'

E308093-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/16/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/16/23	
Toluene	ND	0.0250	1	08/15/23	08/16/23	
o-Xylene	ND	0.0250	1	08/15/23	08/16/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/16/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*115 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*98.3 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*115 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*98.3 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/17/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/17/23	
Surrogate: n-Nonane		*90.2 %*	*50-200*	*08/14/23*	*08/17/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	**21.5**	20.0	1	08/16/23	08/18/23	

Sample Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

BH06 1'

E308093-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Benzene	ND	0.0250	1	08/15/23	08/16/23	
Ethylbenzene	ND	0.0250	1	08/15/23	08/16/23	
Toluene	ND	0.0250	1	08/15/23	08/16/23	
o-Xylene	ND	0.0250	1	08/15/23	08/16/23	
p,m-Xylene	ND	0.0500	1	08/15/23	08/16/23	
Total Xylenes	ND	0.0250	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*116 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*97.4 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2333023
Gasoline Range Organics (C6-C10)	ND	20.0	1	08/15/23	08/16/23	
Surrogate: Bromofluorobenzene		*116 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: 1,2-Dichloroethane-d4		*97.4 %*	*70-130*	*08/15/23*	*08/16/23*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*08/15/23*	*08/16/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2333018
Diesel Range Organics (C10-C28)	ND	25.0	1	08/14/23	08/17/23	
Oil Range Organics (C28-C36)	ND	50.0	1	08/14/23	08/17/23	
Surrogate: n-Nonane		*86.3 %*	*50-200*	*08/14/23*	*08/17/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: BA			Batch: 2333042
Chloride	ND	20.0	1	08/16/23	08/18/23	

QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2333023-BLK1)									Prepared: 08/15/23 Analyzed: 08/15/23
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	*0.585*		*0.500*		*117*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.469*		*0.500*		*93.8*	*70-130*			
Surrogate: Toluene-d8	*0.530*		*0.500*		*106*	*70-130*			
LCS (2333023-BS1)									Prepared: 08/15/23 Analyzed: 08/15/23
Benzene	2.27	0.0250	2.50		91.0	70-130			
Ethylbenzene	2.29	0.0250	2.50		91.6	70-130			
Toluene	2.28	0.0250	2.50		91.2	70-130			
o-Xylene	2.39	0.0250	2.50		95.5	70-130			
p,m-Xylene	4.80	0.0500	5.00		96.1	70-130			
Total Xylenes	7.19	0.0250	7.50		95.9	70-130			
Surrogate: Bromofluorobenzene	*0.594*		*0.500*		*119*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.493*		*0.500*		*98.5*	*70-130*			
Surrogate: Toluene-d8	*0.532*		*0.500*		*106*	*70-130*			
Matrix Spike (2333023-MS1)				**Source: E308093-01**					Prepared: 08/15/23 Analyzed: 08/15/23
Benzene	2.42	0.0250	2.50	ND	96.9	48-131			
Ethylbenzene	2.45	0.0250	2.50	ND	97.9	45-135			
Toluene	2.45	0.0250	2.50	ND	98.1	48-130			
o-Xylene	2.54	0.0250	2.50	ND	102	43-135			
p,m-Xylene	5.09	0.0500	5.00	ND	102	43-135			
Total Xylenes	7.64	0.0250	7.50	ND	102	43-135			
Surrogate: Bromofluorobenzene	*0.598*		*0.500*		*120*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.468*		*0.500*		*93.6*	*70-130*			
Surrogate: Toluene-d8	*0.538*		*0.500*		*108*	*70-130*			
Matrix Spike Dup (2333023-MSD1)				**Source: E308093-01**					Prepared: 08/15/23 Analyzed: 08/15/23
Benzene	2.60	0.0250	2.50	ND	104	48-131	7.13	23	
Ethylbenzene	2.63	0.0250	2.50	ND	105	45-135	7.28	27	
Toluene	2.62	0.0250	2.50	ND	105	48-130	6.70	24	
o-Xylene	2.80	0.0250	2.50	ND	112	43-135	9.51	27	
p,m-Xylene	5.60	0.0500	5.00	ND	112	43-135	9.54	27	
Total Xylenes	8.40	0.0250	7.50	ND	112	43-135	9.53	27	
Surrogate: Bromofluorobenzene	*0.595*		*0.500*		*119*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.489*		*0.500*		*97.8*	*70-130*			
Surrogate: Toluene-d8	*0.530*		*0.500*		*106*	*70-130*			

QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2333023-BLK1)									Prepared: 08/15/23 Analyzed: 08/15/23
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	*0.585*		*0.500*		*117*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.469*		*0.500*		*93.8*	*70-130*			
Surrogate: Toluene-d8	*0.530*		*0.500*		*106*	*70-130*			
LCS (2333023-BS2)									Prepared: 08/15/23 Analyzed: 08/15/23
Gasoline Range Organics (C6-C10)	48.3	20.0	50.0		96.7	70-130			
Surrogate: Bromofluorobenzene	*0.600*		*0.500*		*120*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.496*		*0.500*		*99.1*	*70-130*			
Surrogate: Toluene-d8	*0.546*		*0.500*		*109*	*70-130*			
Matrix Spike (2333023-MS2)				**Source: E308093-01**					Prepared: 08/15/23 Analyzed: 08/15/23
Gasoline Range Organics (C6-C10)	51.3	20.0	50.0	ND	103	70-130			
Surrogate: Bromofluorobenzene	*0.601*		*0.500*		*120*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.493*		*0.500*		*98.5*	*70-130*			
Surrogate: Toluene-d8	*0.537*		*0.500*		*107*	*70-130*			
Matrix Spike Dup (2333023-MSD2)				**Source: E308093-01**					Prepared: 08/15/23 Analyzed: 08/15/23
Gasoline Range Organics (C6-C10)	49.7	20.0	50.0	ND	99.5	70-130	3.07	20	
Surrogate: Bromofluorobenzene	*0.589*		*0.500*		*118*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.483*		*0.500*		*96.5*	*70-130*			
Surrogate: Toluene-d8	*0.533*		*0.500*		*107*	*70-130*			

QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: KM

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2333018-BLK1)									Prepared: 08/14/23 Analyzed: 08/16/23
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	*48.3*		*50.0*		*96.6*	*50-200*			
LCS (2333018-BS1)									Prepared: 08/14/23 Analyzed: 08/16/23
Diesel Range Organics (C10-C28)	228	25.0	250		91.2	38-132			
Surrogate: n-Nonane	*44.4*		*50.0*		*88.8*	*50-200*			
Matrix Spike (2333018-MS1)				**Source: E308093-06**					Prepared: 08/14/23 Analyzed: 08/16/23
Diesel Range Organics (C10-C28)	230	25.0	250	ND	91.9	38-132			
Surrogate: n-Nonane	*43.2*		*50.0*		*86.5*	*50-200*			
Matrix Spike Dup (2333018-MSD1)				**Source: E308093-06**					Prepared: 08/14/23 Analyzed: 08/16/23
Diesel Range Organics (C10-C28)	229	25.0	250	ND	91.4	38-132	0.508	20	
Surrogate: n-Nonane	*42.5*		*50.0*		*85.0*	*50-200*			

QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 15-11	**Reported:**
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Anna Byers	8/18/2023 12:02:25PM

Anions by EPA 300.0/9056A

Analyst: BA

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2333042-BLK1)									Prepared: 08/16/23 Analyzed: 08/18/23
Chloride	ND	20.0							
LCS (2333042-BS1)									Prepared: 08/16/23 Analyzed: 08/18/23
Chloride	248	20.0	250		99.3	90-110			
Matrix Spike (2333042-MS1)				**Source: E308096-01**					Prepared: 08/16/23 Analyzed: 08/18/23
Chloride	380	20.0	250	121	104	80-120			
Matrix Spike Dup (2333042-MSD1)				**Source: E308096-01**					Prepared: 08/16/23 Analyzed: 08/18/23
Chloride	373	20.0	250	121	101	80-120	1.76	20	

QC Summary Report Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Definitions and Notes

WPX Energy - Carlsbad	Project Name:	RDX 15-11	
5315 Buena Vista Dr	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Anna Byers	08/18/23 12:02

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
DNI	Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

Project Information | Chain of Custody | Page 1 of 1

Client: WPX Energy Permian, LLC.	**Bill To**	Lab Use Only	TAT / EPA Program
Project: RDX 15-11	Attention: Jim Raley	Lab WO# E308093	Job Number 01058-0007
Project Manager: Anna Byers	Address: 5315 Buena Vista Dr.		1D 2D 3D Standard: 5 Day TAT
Address: 13000 W County Rd 100	City, State, Zip: Carlsbad, NM, 88220		CWA SDWA RCRA
City, State, Zip_Odessa,TX, 79765	Phone: 575-885-7502		State: NM CO UT AZ TX
Phone: 575-200-6754	Email: jim.raley@dvn.com		
Email: Devon-team@etechenv.com	WBS/WO: TBD		
Collected by: Gilbert Moreno	Incident ID: nAB1800557573		

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	Depth(ft.)	TPH GRO/DRO/ORO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TDS	Cation/Anion	BGDOC NM		GDOC TX		Remarks
13:00	8.11.23	S	1	BH02	1	0.5'								X				
13:10	8.11.23	S	1	BH02	2	1'								X				
13:20	8.11.23	S	1	BH03	3	0.5'								X				
13:30	8.11.23	S	1	BH03	4	1'								X				
13:40	8.11.23	S	1	BH04	5	0.5'								X				
13:50	8.11.23	S	1	BH04	6	1'								X				
14:00	8.11.23	S	1	BH05	7	0.5'								X				
14:10	8.11.23	S	1	BH05	8	1'								X				
14:20	8.11.23	S	1	BH06	9	0.5'								X				
14:30	8.11.23	S	1	BH06	10	1'								X				

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: GM

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	8.11.23	17:30		8-11-23	1730
	8-12-23	2145		8/14/23	8:15

Lab Use Only
Received on ice: (Y) / N
T1 T2 T3
AVG Temp °C 4

Sample Matrix: **S** - Soil, **Sd** - Solid, **Sg** - Sludge, **A** - Aqueous, **O** - Other

Container Type: **g** - glass, **p** - poly/plastic, **ag** - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech

Envirotech Analytical Laboratory

Printed: 8/14/2023 11:41:27AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.
If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	WPX Energy - Carlsbad	Date Received:	08/14/23 08:15	Work Order ID:	E308093
Phone:	(575) 200-6754	Date Logged In:	08/14/23 09:10	Logged In By:	Caitlin Mars
Email:	anna@etechenv.vom	Due Date:	08/18/23 17:00 (4 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC?	Yes	
2. Does the number of samples per sampling site location match the COC	Yes	
3. Were samples dropped off by client or carrier?	Yes	Carrier: Courier
4. Was the COC complete, i.e., signatures, dates/times, requested analyses?	Yes	
5. Were all samples received within holding time? Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this disucssion.	Yes	

Comments/Resolution

Sample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT?	Yes	

Sample Cooler

7. Was a sample cooler received?	Yes	
8. If yes, was cooler received in good condition?	Yes	
9. Was the sample(s) received intact, i.e., not broken?	Yes	
10. Were custody/security seals present?	No	
11. If yes, were custody/security seals intact?	NA	
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling	Yes	
13. If no visible ice, record the temperature. Actual sample temperature: 4°C		

Sample Container

14. Are aqueous VOC samples present?	No	
15. Are VOC samples collected in VOA Vials?	NA	
16. Is the head space less than 6-8 mm (pea sized or less)?	NA	
17. Was a trip blank (TB) included for VOC analyses?	NA	
18. Are non-VOC samples collected in the correct containers?	Yes	
19. Is the appropriate volume/weight or number of sample containers collected?	Yes	

Field Label

20. Were field sample labels filled out with the minimum information:		
Sample ID?	Yes	
Date/Time Collected?	Yes	
Collectors name?	Yes	

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved?	No	
22. Are sample(s) correctly preserved?	NA	
24. Is lab filteration required and/or requested for dissolved metals?	No	

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase?	No	
27. If yes, does the COC specify which phase(s) is to be analyzed?	NA	

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory?	No	
29. Was a subcontract laboratory specified by the client and if so who?	NA	Subcontract Lab: NA

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date

envirotech Inc.

APPENDIX G

NMOCD Notifications

Erick Herrera

From: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Sent: Wednesday, August 2, 2023 5:03 PM
To: Erick Herrera
Cc: Bratcher, Michael, EMNRD; Maxwell, Ashley, EMNRD
Subject: RE: [EXTERNAL] WPX Site Sampling Activity Updates (8/7 - 8-11)

Hi Erick,

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Administrative Permitting Program
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520|Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Erick Herrera <erick@etechenv.com>
Sent: Wednesday, August 2, 2023 3:18 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; blm_nm_cfo_spill@blm.gov
Cc: Raley, Jim <jim.raley@dvn.com>; Devon-Team <Devon-Team@etechenv.com>
Subject: [EXTERNAL] WPX Site Sampling Activity Updates (8/7 - 8-11)

Good afternoon,

WPX anticipates conducting confirmation soil sampling activities at the following sites between August 7th through August 11th, 2023:

Proposed Date: August 7, 2023, August 8, 2023, August 9, 2023, August 10, 2023, August 11, 2023,
Proposed Timeframe: 0800 – 1700 hrs.
Site Name: RDX 9-4
Incident Number: nAB1803254347
API: 30-015-40180

Proposed Date: August 7, 2023, August 8, 2023, August 9, 2023, August 10, 2023, August 11, 2023,
Proposed Timeframe: 0800 – 1700 hrs.
Site Name: RDX 28 #009H
Incident Number: nAB1632648516
API: 30-015-43294

Proposed Date: August 7, 2023, August 8, 2023, August 9, 2023, August 10, 2023, August 11, 2023,
Proposed Timeframe: 0800 – 1700 hrs.
Site Name: RDX 17-14
Incident Number: nAB1504834000
API: 30-015-39845

Proposed Date: August 7, 2023, August 8, 2023, August 9, 2023, August 10, 2023, August 11, 2023,
Proposed Timeframe: 0800 – 1700 hrs.
Site Name: RDX 15-11
Incident Number: nAB1800557573
API: 30- 015-37093

Proposed Date: August 7, 2023, August 8, 2023, August 9, 2023, August 10, 2023, August 11, 2023,
Proposed Timeframe: 0800 – 1700 hrs.
Site Name: RDU 61
Incident Number: nAB1631949226
API: 30-015041980

Proposed Date: August 7, 2023, August 8, 2023, August 9, 2023, August 10, 2023, August 11, 2023,
Proposed Timeframe: 0800 – 1700 hrs.
Site Name: RDU 42
Incident Number: nAB1605654667
API: 30-015-42945

Proposed Date: August 7, 2023, August 8, 2023, August 9, 2023, August 10, 2023, August 11, 2023,
Proposed Timeframe: 0800 – 1700 hrs.
Site Name: RDU 12
Incident Number: nAB1702749185
API: 30-015-24793

Thank you,

Erick Herrera
Staff Geologist

eTECH Environmental & Safety Solutions, Inc.

Work: (432) 305-6416
Cell: (281) 777-4152

APPENDIX H

Previously Submitted Closure Report

A proud member of WSP

LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

March 13, 2020

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

RE: Closure Request
WPX Energy Permian, LLC.
RDX 15-11 (2RP-4032 & 2RP-4545)
Incident ID NAB1634938164 & NAB1800557573
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of WPX Energy Permian, LLC. (WPX), presents the following Closure Request detailing soil sampling and excavation activities at the RDX 15-11 (Site) in Unit F, Section 15, Township 26 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following two separate events that resulted in the release of produced water and crude oil onto the pad surface. Based on the excavation activities and results of the soil sampling events, WPX is submitting this Closure Request.

BACKGROUND

2RP-4032

On December 4, 2016, the malfunction of a heater treater caused the heater treater and neighboring separator to catch fire, which resulted in the release of 120 barrels (bbls) of produced water, including less than one bbl of crude oil. Production fluids were contained within the earthen berm containment except an estimated one to two bbls of produced water misting on to the adjacent pad surface.

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) which was received by the NMOCD on December 13, 2016 and was assigned Remediation Permit (RP) Number 2RP-4032 and Incident ID NAB1634938164 (Attachment 1).

2RP-4545

On December 21, 2017, the gasket on a man cover for a water knockout failed resulting in the release of 75 bbls of produced water into the earthen berm containment and lightly misted nearby vegetation to the east. A vacuum truck was dispatched to collect all free-standing fluids.

WPX reported the release to the NMOCD on a Form C-141 which was received by the NMOCD on January 3, 2018 and was assigned RP Number 2RP-4545 and Incident ID NAB1800557573 (Attachment 1).

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet bgs based on known aquifer properties and the elevation difference between the Site and an identified groundwater well. The nearest permitted groundwater well with depth to groundwater data is United States Geological Survey (USGS) groundwater well 320355103524001, located approximately 8,015 feet north of the Site. Groundwater well 320355103524001 has a reported depth to groundwater of 164 feet bgs and is approximately 30 feet higher in elevation than the Site. The closest significant watercourse to the Site is an unnamed dry wash located approximately 1,470 feet north to northwest of the Site. The Site is greater than 300 feet from any occupied residence, school, hospital, institution, church, or wetland and greater than 1,000 feet to a freshwater well or spring. The Site is not within a 100-year floodplain or overlying a subsurface mine and is overlying an unstable area. The Site is located in a medium-potential karst area.

On January 30, 2020, LTE contracted Southwest Geophysical Consulting, LLC (SGC) to determine the location, description, and boundaries of any karst-related features within a 200-meter boundary surrounding the Site. The survey concluded that no surface karst features were located within the survey area and that the Site is located in a medium-potential karst area. The survey was conducting after the excavation detailed below and soil sampling activities that removed approximately 90 cubic yards of impacted soil from the release area. The Cave and Karst Resource Inventory Report is included as Attachment 2.

Based on the findings of the karst survey, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

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

PRELIMINARY SOIL SAMPLING

On December 7, 2016, WPX personnel inspected the Site to evaluate impacts following Incident ID NAB1634938164 (2RP-4032). Surface soil samples RDX 15-11-1 and RDX 15-11-2 were collected from the release area to characterize soil impacts. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to ALS Environmental in Holland, Michigan, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8260C; TPH-GRO, TPH-DRO, and TPH-motor oil range organics (MRO) following EPA Method SW8015D and SW8270; and chloride following Standard Methods for Examination of Water and Wastewater Method A4500-CL E-11.

On March 2, 2017, WPX personnel returned to the Site to continue characterization in the area of samples RDX 15-11-1 and RDX 15-11-2. Soil samples were collected every one-foot interval to a depth of three feet bgs. A total of three samples were collected at each location. Soil samples were collected, handled, and analyzed as previously described.

On January 23, 2018, WPX personnel inspected the Site to evaluate impacts following Incident ID NAB1800557573 (2RP-4545). Soil samples S1 though S5 were collected at depths ranging from zero ft bgs to six ft bgs per sample location. Soil confirmation samples were collected, handled, and analyzed as previously described. Soil sample locations are depicted on Figure 2. Laboratory analytical results from all preliminary samples are summarized in Table 1.

DELINEATION SOIL SAMPLING

On November 14, 2018, LTE personnel returned to the Site to further evaluate the release extent and soil impacts. LTE field screened soil within the release area for volatile aromatic hydrocarbons using a photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips and collected soil samples SS01 through SS05 for laboratory analysis. Soil sample locations are presented on Figure 2. Two samples were collected at each sample location at approximately 0.5 ft and 1 ft bgs using a hand auger. Soil samples were placed directly into

pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 °C under strict COC procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following EPA Method 8021B; TPH- GRO, TPH- DRO, and TPH- ORO following EPA Method 8015M/D; and chloride following EPA Method 300.0. Photographic documentation was conducted during the Site visit. Photographic Logs are included in Attachment 3. Lithologic/Soil Sampling Logs are included in Attachment 4.

EXCAVATION SOIL SAMPLING

On February 2, 2019, LTE was on site to oversee excavation activities within the release area. Excavation activities were directed by field screening soil samples for volatile aromatic hydrocarbons using a PID and chloride using Hach® chloride QuanTab® test strips. Following completion of excavation activities, 5-point composite confirmation soil samples were collected from the floor (samples labeled as "FS") and sidewalls (samples labeled as "SW") of the excavation area. Each soil sample represented at most 200 square feet. Approximately 90 cubic yards of impacted soil were removed from the excavation area and transported to the R360 Red Bluff Facility in Orla, Texas for disposal. The excavation area measured a total of approximately 855 square feet in area and ranged in depth from zero feet bgs to three feet bgs. Soil confirmation samples were collected, handled, and analyzed as previously described. The excavation area and soil sample locations are depicted on Figure 3. Photographic documentation was conducted during the site visit. The Photographic Logs are included in Attachment 2.

ANALYTICAL RESULTS

Laboratory analytical results of all final excavation confirmation soil samples indicate compliance with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 5.

CONCLUSIONS

A total of approximately 90 cubic yards of impacted soil were excavated from the Site. Following excavation and sampling activities, SGC's karst survey determined the Site to be in a medium-potential karst area. Laboratory analytical results of final excavation confirmation soil samples indicate compliance with Closure Criteria. WPX is requesting closure of 2RP-4032 and 2RP-4545 corresponding to Incident ID NAB1634938164 & NAB1800557573, respectively. Upon approval of this Closure Request, WPX will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Chris McKisson
Project Environmental Scientist

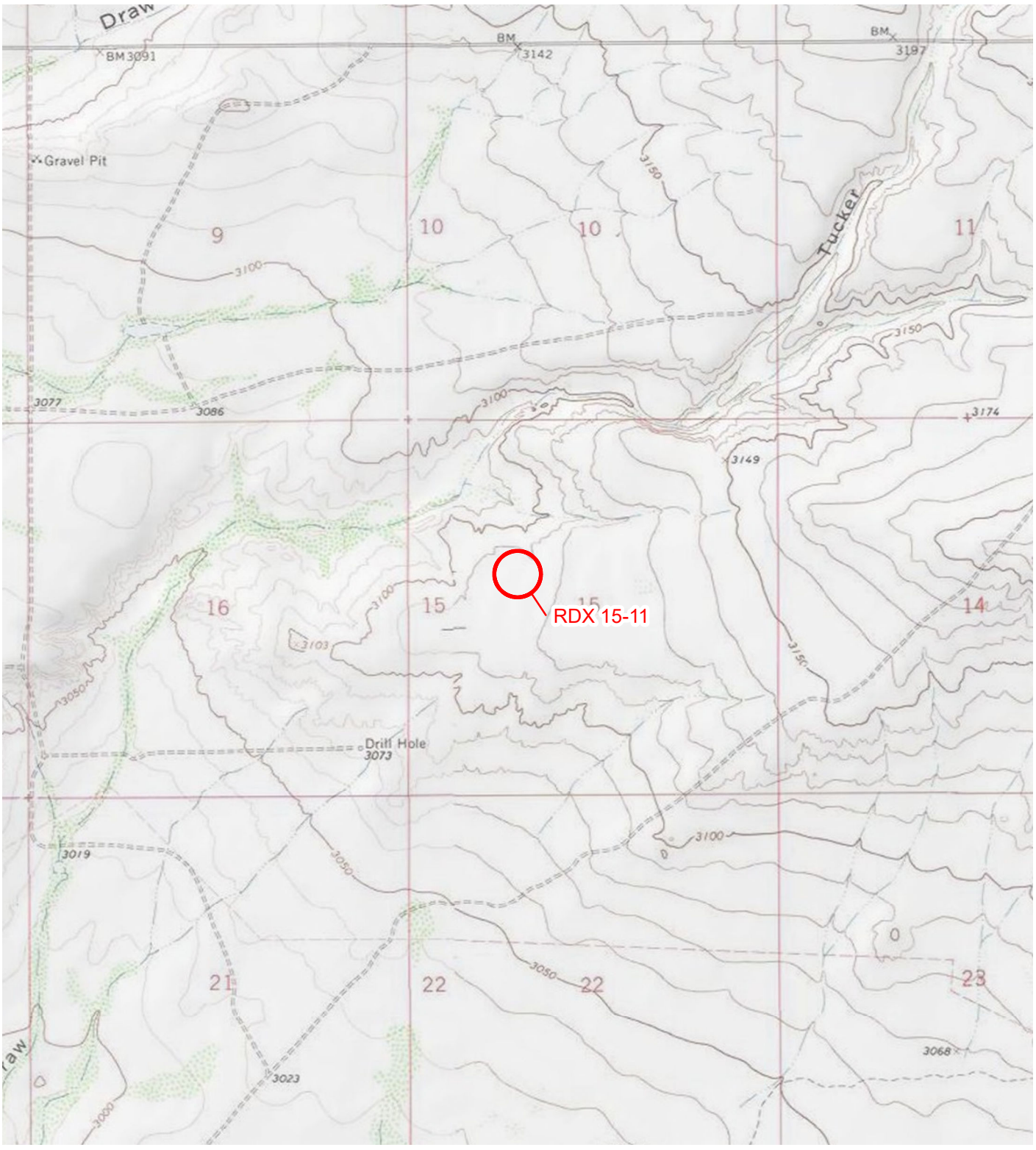
Ashley L. Ager, M.S., P.G.
Senior Geologist

cc: Jim Raley, WPX
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Jim Amos, BLM

Appendices:

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

FIGURES



LEGEND

IMAGE COURTESY OF ESRI/USGS

SITE LOCATION

0 2,000 4,000

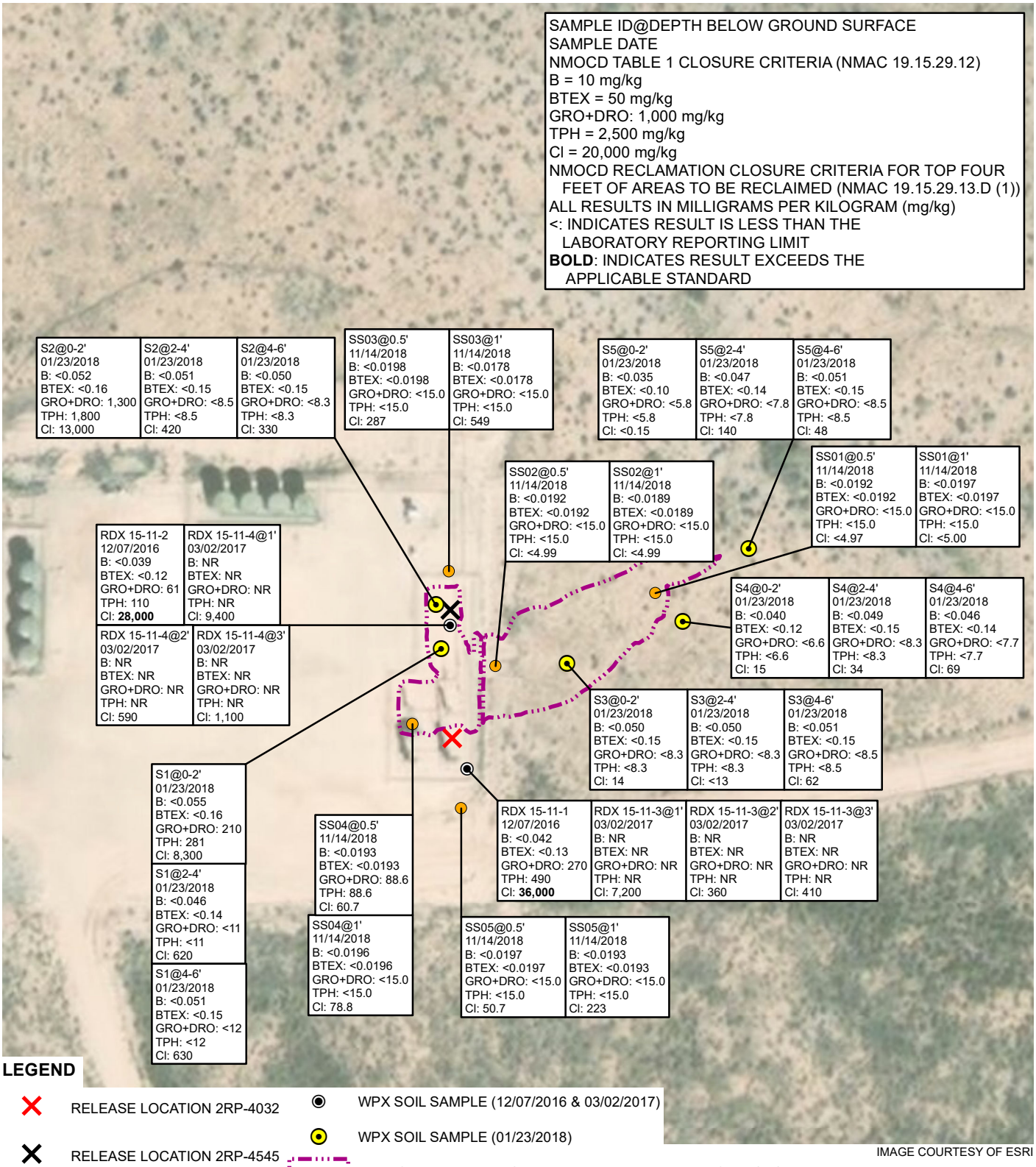
Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
RDX 15-11
UNIT F SEC 15 T26S R30E
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

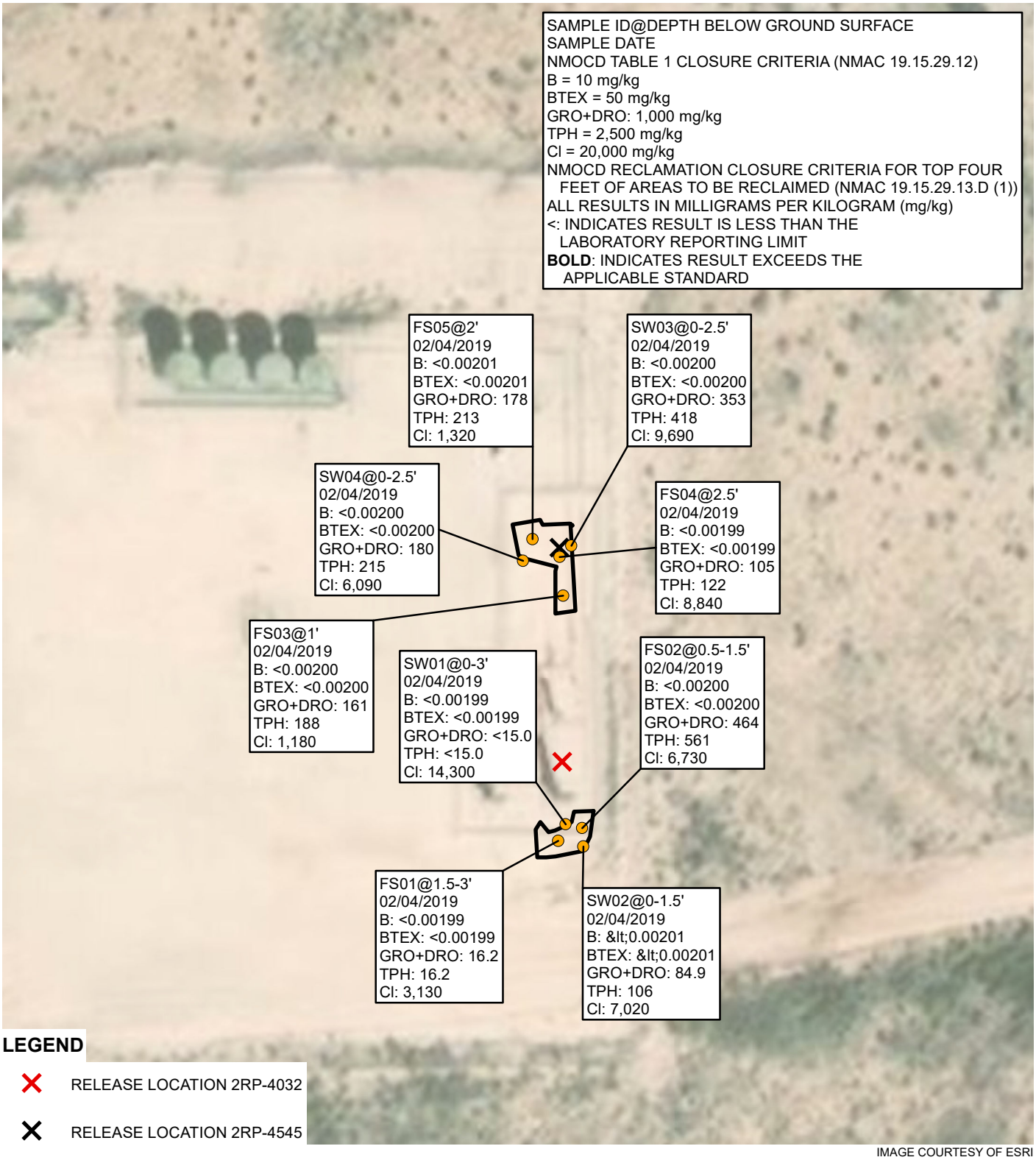
P:\WPX\GIS\MXD\034820007_RDX 15-11\034820007_FIG01_SL_2020.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION

FIGURE 2
DELINEATION SOIL SAMPLE LOCATIONS
RDX 15-11
UNIT F SEC 15 T26S R30E
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

P:\WPX\GIS\MXD\034820007_RDX 15-11\034820007_FIG02_DELINEATION SS_2020.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
RDX 15-11
UNIT F SEC 15 T26S R30E
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

P:\WPX\GIS\MXD\034820007_RDX 15-11\034820007_FIG03_EXCAVATION SS_2020.mxd

TABLE

TABLE 1
SOIL ANALYTICAL RESULTS

RDX 15-11
REMEDIATION PERMIT NUMBERS 2RP-4032 AND 2RP-4545
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Sum of GRO + DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
On-Pad Site Soil Samples													
RDX 15-11-1*	Surface	12/07/2016	<0.042	<0.042	<0.042	<0.13	<0.13	<3.5	270	220	270	490	**36,000**
RDX 15-11-2*	Surface	12/07/2016	<0.039	<0.039	<0.039	<0.12	<0.12	<3.2	61	49	61	110	**28,000**
RDX 15-11-3*	1	03/02/2017	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	7,200
RDX 15-11-3*	2	03/02/2017	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	360
RDX 15-11-3*	3	03/02/2017	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	410
RDX 15-11-4*	1	03/02/2017	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	9,400
RDX 15-11-4*	2	03/02/2017	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	590
RDX 15-11-4*	3	03/02/2017	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1,100
S1*	0-2	01/23/2018	<0.055	<0.055	<0.055	<0.16	<0.16	<9.1	210	71	210	281	8,300
S1*	2-4	01/23/2018	<0.046	<0.046	<0.046	<0.14	<0.14	<7.7	<11	<11	<11	<11	620
S1*	4-6	01/23/2018	<0.051	<0.051	<0.051	<0.15	<0.15	<8.5	<12	<12	<12	<12	630
S2*	0-2	01/23/2018	<0.052	<0.052	<0.052	<0.16	<0.16	<8.7	1,300	500	1,300	1,800	13,000
S2*	2-4	01/23/2018	<0.051	<0.051	<0.051	<0.15	<0.15	<8.5	<6.5	<6.5	<8.5	<8.5	420
S2*	4-6	01/23/2018	<0.050	<0.050	<0.050	<0.15	<0.15	<8.3	<6.6	<6.6	<8.3	<8.3	330
SS02	0.5	11/14/2018	<0.0192	<0.0192	<0.0192	<0.0192	<0.0192	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS02	1	11/14/2018	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS03	0.5	11/14/2018	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<15.0	<15.0	<15.0	<15.0	<15.0	287
SS03	1	11/14/2018	<0.0178	<0.0178	<0.0178	<0.0178	<0.0178	<15.0	<15.0	<15.0	<15.0	<15.0	549
SS04	0.5	11/14/2018	<0.0193	<0.0193	<0.0193	<0.0193	<0.0193	<14.9	88.6	<14.9	88.6	88.6	60.7
SS04	1	11/14/2018	<0.0196	<0.0196	<0.0196	<0.0196	<0.0196	<15.0	<15.0	<15.0	<15.0	<15.0	78.8
SS05	0.5	11/14/2018	<0.0197	<0.0197	<0.0197	<0.0197	<0.0197	<15.0	<15.0	<15.0	<15.0	<15.0	50.7
SS05	1	11/14/2018	<0.0193	<0.0193	<0.0193	<0.0193	<0.0193	<15.0	<15.0	<15.0	<15.0	<15.0	223

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TABLE 1
SOIL ANALYTICAL RESULTS

RDX 15-11
REMEDIATION PERMIT NUMBERS 2RP-4032 AND 2RP-4545
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Sum of GRO + DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
FS01	1.5-3	02/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	16.2	<15.0	16.2	16.2	3,130
FS02	0.5-1.5	02/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	464	96.8	464	561	6,730
FS03	1	02/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	161	27.4	161	188	1,180
FS04	2.5	02/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	105	17.0	105	122	8,840
FS05	2	02/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	178	35.4	178	213	1,320
SW01	0-3	02/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	14,300
SW02	0-1.5	02/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	84.9	21.5	84.9	106	7,020
SW03	0-2.5	02/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	353	65.3	353	418	9,690
SW04	0-2.5	02/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	180	35.1	180	215	6,090
Off-Pad Site Soil Samples													
S3*	0-2	01/23/2018	<0.050	<0.050	<0.050	<0.15	<0.15	<8.3	<6.6	<6.6	<8.3	<8.3	14
S3*	2-4	01/23/2018	<0.050	<0.050	<0.050	<0.15	<0.15	<8.3	<6.4	<6.4	<8.3	<8.3	<13
S3*	4-6	01/23/2018	<0.051	<0.051	<0.051	<0.15	<0.15	<8.5	<6.6	<6.6	<8.5	<8.5	62
S4*	0-2	01/23/2018	<0.040	<0.040	<0.040	<0.12	<0.12	<6.6	<5.7	<5.7	<6.6	<6.6	15
S4*	2-4	01/23/2018	<0.049	<0.049	<0.049	<0.15	<0.15	<8.2	<8.3	<8.3	<8.3	<8.3	34
S4*	4-6	01/23/2018	<0.046	<0.046	<0.046	<0.14	<0.14	<7.7	<7.5	<7.5	<7.7	<7.7	69
S5*	0-2	01/23/2018	<0.035	<0.035	<0.035	<0.10	<0.10	<5.8	<5.3	<5.3	<5.8	<5.8	<11
S5*	2-4	01/23/2018	<0.047	<0.047	<0.047	<0.14	<0.14	<7.8	<6.3	<6.3	<7.8	<7.8	140
S5*	4-6	01/23/2018	<0.051	<0.051	<0.051	<0.15	<0.15	<8.5	<6.7	<6.7	<8.5	<8.5	48
SS01	0.5	11/14/2018	<0.0192	<0.0192	<0.0192	<0.0192	<0.0192	<15.0	<15.0	<15.0	<15.0	<15.0	<4.97
SS01	1	11/14/2018	<0.0197	<0.0197	<0.0197	<0.0197	<0.0197	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00

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TABLE 1
SOIL ANALYTICAL RESULTS

RDX 15-11
REMEDIATION PERMIT NUMBERS 2RP-4032 AND 2RP-4545
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Sum of GRO + DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

NR - not requested

mg/kg - milligrams per kilogram

MRO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

Table 1 - Closure Criteria for Soils Impacted by a Release per NMAC 19.15.29 August 2018

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory detection limit

Bold indicates result exceeds the applicable regulatory standard

* - indicates sample collected and submitted by WPX

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ATTACHMENT 1: FORM C-141

NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 13 2016
RECEIVED

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

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

nAB1634938164

OPERATOR

☒ Initial Report ☒ Final Report

Name of Company WPX Energy Inc/RKI 246289	Contact Karolina Blaney
Address 5315 Buena Vista Dr.	Telephone No. 970 589 0743
Facility Name: RDX 15-11	Facility Type: Well Pad

Surface Owner: Federal	Mineral Owner: Federal	API No. 30- 015-37093

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	15	26S	30E	2200	FNL	1500	FWL	Eddy

Latitude: 32.043733284 N **Longitude**: -103.872277755 W

NATURE OF RELEASE

Type of Release. Produced Water and Oil	Volume of Release: 120 Bbls	Volume Recovered: 0 Bbls
Source of Release Heater Treater	Date and Hour of Occurrence 12/4/2016	Date and Hour of Discovery 12/4/2016 – 9:45 hrs MT
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD Heather Patterson & Michael Bratcher, BLM Shelly Tucker	
By Whom? Karolina Blaney	Date and Hour: 12/05/16 – 3:40 hrs MT	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.* N/A

Describe Cause of Problem and Remedial Action Taken.*

The cause of this spill is malfunction of the heater treater. The treater and separator caught on fire which resulted in a produced water and oil spill (less than 1 bbl of oil). The majority of the spill was contained inside the SPCC containment berm; approximately 1-2 bbls of water misted outside of the containment. The impacted area was mapped with Trimble.

Describe Area Affected and Cleanup Action Taken.*

The damaged equipment, which was located on the north side of the containment, was removed. Two grab surface samples were collected from the impacted area and are being analyzed for TPH, BTEX and chlorides in accordance with NM OCD Guidelines for Remediation of Leaks, Spills, and Releases. Further remediation will be based on these results.

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

Signature: Karolina Blaney	OIL CONSERVATION DIVISION Signed By Approved by Environmental Specialist:	
Printed Name: Karolina Blaney		
Title: Environmental Specialist	Approval Date: 12/13/16	Expiration Date: N/A
E-mail Address: Karolina.blaney@wpxenergy.com	Conditions of Approval:	Attached ☒
Date: 12/13/2016 Phone: 970-589-0743		

* Attach Additional Sheets If Necessary

2RP-4033

State of New Mexico
Oil Conservation Division

Incident ID	NAB1634938164
District RP	2RP-4032
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAB1634938164
District RP	2RP-4032
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

Signature: Lynda Laumbach Date: 03/26/2020

email: Lynda.Laumbach@wpxenergy.com Telephone: (575)725-1647

OCD Only

Received by: _____ Date: _____

Incident ID	NAB1634938164
District RP	2RP-4032
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Lynda Laumbach Title: Environmental Specialist

Signature: Lynda Laumbach Date: 03/26/2020

email: Lynda.Laumbach@wpxenergy.com Telephone: (575)725-1647

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 03 2018
RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
District II
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1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

nAB1800557573 * 246289

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: RKI Exploration / WPX Energy	Contact: James Raley
Address: 5315 Buena Vista Dr.	Telephone No: 575-689-7597
Facility Name: RDX 15-11	Facility Type: Well Pad

Surface Owner: Federal	Mineral Owner: Federal	API No. 30- 015-37093

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	15	26S	30E	220	FNL	1500	FWL	Eddy

Latitude 32.043733284 N **Longitude** -103.872277755 W

NATURE OF RELEASE

Type of Release: Produced Water ~~and Oil~~	Volume of Release: 75 bbls	Volume Recovered 65 bbls
Source of Release; Water Knockout	Date and Hour of Occurrence 12/21/2017	Date and Hour of Discovery 12/21/2017 at 10:15 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? C. Weaver, M. Bratcher	
By Whom? Karolina Blaney	Date and Hour 12/21/2017 3:33 PM	
Was a Watercourse Reached? ☒ Yes ☐ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The cause of this spill is equipment failure; a gasket on a man cover for a water knockout failed which resulted in a 75 bbls spill of produced water into a dirt SPCC containment. 65 bbls were recovered with a vac truck. Flow to the water knockout vessel was immediately stopped and repairs were made to the damaged gasket.

Describe Area Affected and Cleanup Action Taken.*
Impacts were limited to fluids inside of SPCC containment and light misting on some vegetation along east edge of containment. Free liquids were immediately recovered, a one call was placed and affected soils removed. Samples to be collected from the affected area and will be analyzed for TPH, BTEX and chlorides in accordance with NM OCD Guidelines. Any additional remediation to be determined based on sample results.

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Signature:	OIL CONSERVATION DIVISION
Printed Name: James Raley	Signed By: Approved by Environmental Specialist:
Title: Environmental Specialist	Approval Date: 1/5/18 Expiration Date: N/A
E-mail Address: james.raley@wpxenergy.com	Conditions of Approval: See attached Attached ☐ 2RP-4545
Date: 1/3/2018 Phone: 575-689-7597	

* Attach Additional Sheets If Necessary

1/4/18 AB

State of New Mexico
Oil Conservation Division

Incident ID	NAB1800557573
District RP	2RP-4545
Facility ID	
Application ID	

Site Assessment/Characterization

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Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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Printed Name: Lynda Laumbach Title: Environmental Specialist

Signature: Lynda Laumbach Date: 03/26/2020

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

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Printed Name: Lynda Laumbach Title: Environmental Specialist

Signature: Lynda Laumbach Date: 03/26/2020

email: Lynda.Laumbach@wpxenergy.com Telephone: (575)725-1647

OCD Only

Received by: _____ Date: _____

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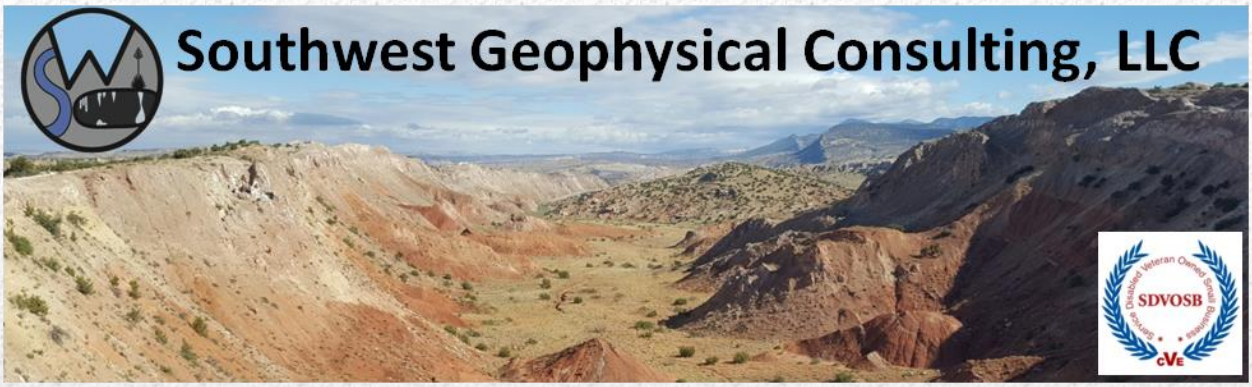
Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

ATTACHMENT 2: CAVE AND KARST RESOURCE INVENTORY REPORT



Cave and Karst Resource Inventory Report
RDX 15-11 Central Tank Battery
Eddy County, New Mexico

Prepared for:

LT Environmental, Inc.
820 Megan Avenue, Unit B
Rifle, CO 81650

☐ **Positive for Karst Features – HKOZ remediation process required**

☑ **Negative for Karst Features – MKOZ remediation process may be approved by the Oil Conservation Division**

February 10, 2019

LTE-004-20200123

Published by:

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

Prepared by:

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

Prepared for:

LT Environmental, Inc.
820 Megan Avenue, Unit B
Rifle, CO 81650

Point of Contact:

Chris McKisson
(970) 285-9985
cmckisson@ltenv.com

MMXX

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1.0 INTRODUCTION

This report was commissioned by LT Environmental, Inc. (hereinafter referred to as "the client") on January 23, 2020 for the purpose of determining what, if any, karst-related surface features are present near the RDX 15-11 Central Tank Battery (hereinafter termed “RDX”, **Figure 1**) and to provide guidance on the level of remediation required. This study does not include subsurface features, which would require a geophysical survey. The study area that this report covers is in a **MEDIUM** karst occurrence zone and entirely located within Bureau of Land Management – Carlsbad Field Office managed lands (**Figure 2**).

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

1.1 Goals of this Study

To provide the client with the location, description, photos, and boundaries of any surface karst-related features within a 200-meter boundary surrounding the RDX 15-11 pad as provided by the client via e-mail on January 23, 2020.

1.2 Summary of Findings

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

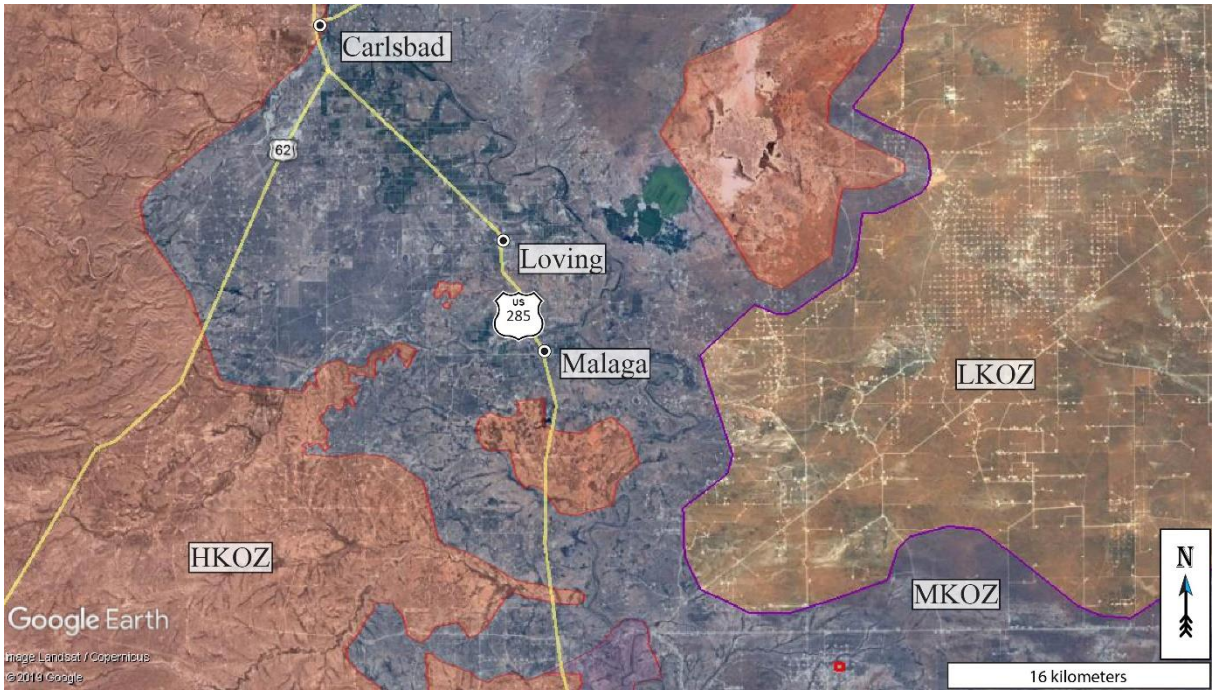

Figure 1: Karst occurrence overview. Red transparent area is a high karst occurrence zone; blue transparent area is a medium karst occurrence zone; no color indicates a low karst occurrence zone. Study area is the red outlined area in the lower-right portion of the image. Background image credit: Google Earth. Image date: February 21, 2019. Datum: WGS-84.

1.3 Affected Environment

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

The Bureau of Land Management (BLM) categorizes all areas within the Carlsbad Field Office (CFO) zone of responsibility as having either low, medium, or high cave potential based on geology, occurrence of known caves, density of karst features, and potential impacts to freshwater aquifers. This project occurs within a **MEDIUM** karst occurrence zone[1] (MKOZ, **Figure 1**). A medium karst occurrence zone is defined as an area in known soluble rock types that may have a shallow insoluble overburden. These areas may contain isolated karst features such as caves and sinkholes. Groundwater recharge may not be wholly dependent on karst features, but the karst features still provide the most rapid aquifer recharge in response to surface runoff[2].

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

2.0 LOCATION AND DESCRIPTION OF STUDY AREA

2.1 Description of Site

The RDX project site is located in Eddy County, New Mexico, 50 kilometers (31 miles) southeast of Carlsbad, New Mexico; 18 kilometers (11 miles) east of US-285, and 5 kilometers (3 miles) north of the New Mexico-Texas Border (**Figure 1** and **Figure 2**). The site is located within section 15 of NM T26S R30E. This area is within the Chihuahuan Desert Thornscrub defined by the Southwestern Regional ReGAP Vegetation map[5] and the vegetation consists mostly of areas of grass, sparse creosote, and sparse yucca with very good visibility in most locations. See section ***2.3 Local Geology*** for the geology of the area. The pad and surrounding survey boundary are entirely within a medium karst occurrence zone (**Figure 1**) and are located entirely within BLM-CFO managed lands (**Figure 2**).

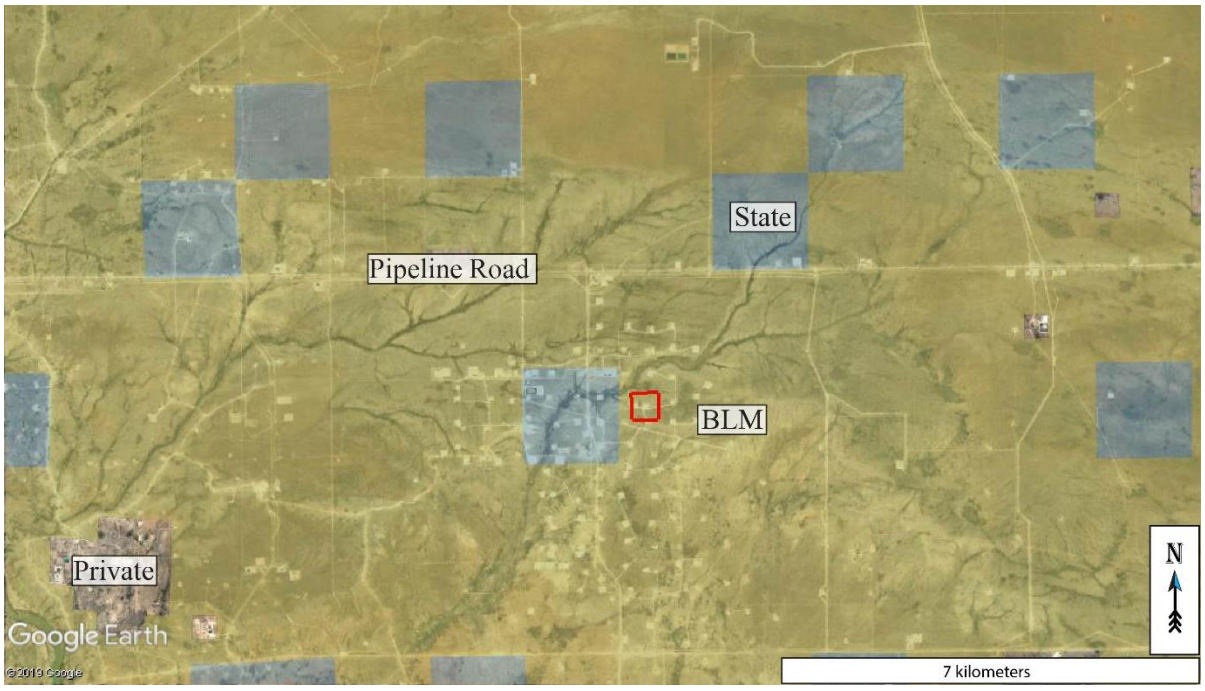

Figure 2: Land ownership overview. Yellow transparent area: BLM-CFO managed land. Blue transparent area: New Mexico State Land Office managed land. No color: Private land. Background image credit: Google Earth. Image date: February 21, 2019. Datum: WGS-84.

2.2 Description of Survey

For this survey 10 lines were walked in a raster pattern at 50-meter (165 feet) intervals in the designated area, providing 90 to 100% coverage for features greater than 50 centimeters (20 inches) in diameter (**Table 1**).

The survey was completed by Garrett Jorgensen on January 31, 2020. The total distance walked was 4.7 kilometers (2.9 miles) and the total area covered was 0.2 square kilometers (47.0 acres).

Table 1: Survey Track Data Files.

File Name	**Surveyor**	**Date**	**Length** (km/miles)	**Area** (km^2/Ac)
RDXSRV_D1S1.kmz	Jorgensen	01/31/2020	4.72/2.93	0.19/47.0

Figure 3: Survey overview. Light blue wavy lines are the actual survey lines walked. Yellow polygon is the pad site. Red polygon is the 200-meter buffer study area. Background image credit: Google Earth. Image date: November 02, 2017. Datum: WGS-84.

2.3 Local Geology

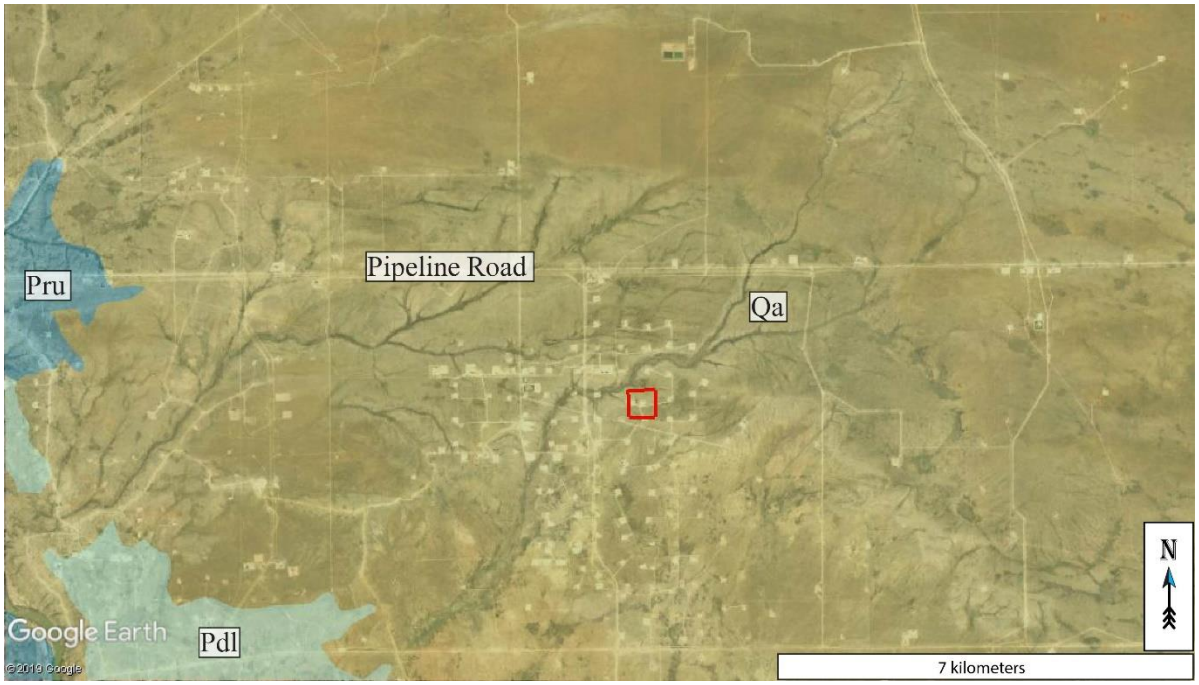

Figure 4: Geology overview. Red polygon highlights the survey area. Pru: Permian Rustler Formation. Pdl: Permian Dewey Lake Formation. Qa: Quaternary units, locally includes both Qg: Quaternary Gatuna Formation and Qs: Quaternary windblown sand. Map credit: Geologic Map of New Mexico, scale: 1:500,000 (2003), and Google Earth. Image date: February 21, 2019. Datum: WGS-84.

The area surveyed for the RDX project is located at an elevation of 950 meters (3,115 feet), plus or minus 3 meters (9 feet), within the Quaternary Gatuna Formation (Qg – not shown. Within Qa on map) and Quaternary windblown sand (Qs – not shown. Within Qa on map). The Gatuna Formation is a conglomerate composed of calcite cemented limestone and sandstone cobble derived from the Guadalupe Mountains. The large proportion of calcite that makes up the matrix for this formation allows limited karst formation to occur. The entirety of the survey area is underlain by the Permian Dewey Lake Formation (Pdl), which outcrops in the southernmost section of the survey area, and Permian Rustler (Pru) Formation (which does not outcrop within the survey area). The Dewey Lake Formation is composed of calcite cemented, hematite stained quartz sand grains and is not known for forming karst. The Rustler Formation is composed of alternating layers of gypsum and dolomite, both of which are easily dissolved to form karst features[3, 4]. Two easily accessible geologic maps that cover the survey area are the Geologic Map of New Mexico (2003) at 1:500,000 scale[2], and the Geologic Atlas of Texas - Hobbs Sheet (1976) at 1:250,000 scale.

2.4 Description of Karst Features

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

3.0 RECOMMENDATIONS

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

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

4.0 REFERENCES

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

5.0 GLOSSARY OF TERMS

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

ATTACHMENT 3: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: View of southern excavation facing east.

Photograph 2: View of southern excavation facing southwest.

Photograph 3: View of northern excavation facing north.

Photograph 4: View of northern excavation facing southwest.

RDX 15-11
32.043733284, -103.87227775
Photographs Taken: February 20, 2019

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ATTACHMENT 4: LITHOLOGIC/SOIL SAMPLING LOGS

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

BH or PH Name: SS01	Date: 11/14/18
Site Name: ROX 15-11	
RP or Incident Number:	
LTE Job Number: 03482000Z	
Logged By: LL	Method:
Lat/Long:	Field Screening: Chloride, PID
Hole Diameter:	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
1026 D	492	48.5	N		0.5'	0		gravel, top soil, odor
1036 D	720	5.5	N		1'	1		Same as above (S&A)
1040 D	548	15.2	N		2'	2		S&A
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

LT Environmental, Inc.
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Carlsbad, New Mexico 88220
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BH or PH Name: SS02	Date: 11/14/18
Site Name: RDX 15-11	
RP or Incident Number:	
LTE Job Number: 03482000 7	
Logged By: Lynda	Method:
Hole Diameter:	Total Depth: 2' EN 1'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:
Field Screening: Chloride, PID
Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
1050 D	<120	4.4	N		0.5'	0		topsoil, sandy loam, no odor, no staining
1055 D	<120	2.3	N		1'	1		same as above
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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BH or PH Name: SS03	Date: 11/14/18
Site Name: RDX 15-11	
RP or Incident Number:	
LTE Job Number: 034820007	
Logged By: LL	Method:
Lat/Long:	Field Screening: Chloride, PID
Hole Diameter:	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
1105 D	<120	1.3	N		0.5'	0		topsoil, sandy loam, no odor
1110 D	<120	0.9	N		1'	1		Same as above
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

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BH or PH Name: SS04	Date: 11/14/18
Site Name: RDX 15-11	
RP or Incident Number:	
LTE Job Number: 08482007	
Logged By: LL	Method:
Hole Diameter:	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:
Field Screening: Chloride, PID
Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
1130 D	248	1.4	N		0.5'	0		top soil, sandy loam, no odor
1145 D	916	1.8	N		1'	1		Same as above (SAA)
1320 D	988	2.1	N		1.5'	2		SAA
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

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BH or PH Name: SS05	Date: 11/14/18
Site Name: RDX 15-11	
RP or Incident Number:	
LTE Job Number: 034820007	
Logged By: LL	Method:
Hole Diameter:	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:
Field Screening: Chloride, PID
Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
1240 D	2,607	1.9	N		0.5'	0		topsoil, sandy loam, no odor
1250 D	1,140	2.2	N		1'	1		same as above
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ATTACHMENT 5: LABORATORY ANALYTICAL REPORTS

21-Dec-2016

Karolina Blaney
WPX Energy
5315 Buena Vista Dr.
Carlsbad, NM 88220

Re: **RDX 15-11** Work Order: **1612637**

Dear Karolina,

ALS Environmental received 2 samples on 10-Dec-2016 10:15 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 15.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

Report of Laboratory Analysis

ALS Group, USA

Date: 21-Dec-16

Client: WPX Energy
Project: RDX 15-11
Work Order: **1612637**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1612637-01	RDX 15-11-1	Soil		12/7/2016 10:00	12/10/2016 10:15	☐
1612637-02	RDX 15-11-2	Soil		12/7/2016 10:20	12/10/2016 10:15	☐

ALS Group, USA

Date: 21-Dec-16

Client: WPX Energy
Project: RDX 15-11
Work Order: 1612637

Case Narrative

Batch 95757, Method DRO_8015_S, Sample 1612637-02B MSD: The RPD between the MS and MSD was outside the control limit for DRO/ORO. The corresponding result in the parent sample should be considered estimated.

ALS Group, USA

Date: 21-Dec-16

Client: WPX Energy
Project: RDX 15-11
WorkOrder: **1612637**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: *21-Dec-16*

Client: WPX Energy
Project: RDX 15-11 **Work Order:** 1612637
Sample ID: RDX 15-11-1 **Lab ID:** 1612637-01
Collection Date: 12/7/2016 10:00 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 12/13/16	Analyst: **IT**
DRO (C10-C28)	**270**		**5.7**	**mg/Kg-dry**	1	12/16/2016 01:50 PM
ORO (C28-C40)	**220**		**5.7**	**mg/Kg-dry**	1	12/16/2016 01:50 PM
Surr: 4-Terphenyl-d14	*66.0*		*39-133*	*%REC*	1	12/16/2016 01:50 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 12/12/16	Analyst: **IT**
GRO (C6-C10)	ND		3.5	mg/Kg-dry	1	12/12/2016 04:20 PM
Surr: Toluene-d8	*102*		*50-150*	*%REC*	1	12/12/2016 04:20 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 12/12/16	Analyst: **LSY**
Benzene	ND		0.042	mg/Kg-dry	1	12/13/2016 05:36 AM
Ethylbenzene	ND		0.042	mg/Kg-dry	1	12/13/2016 05:36 AM
m,p-Xylene	ND		0.085	mg/Kg-dry	1	12/13/2016 05:36 AM
o-Xylene	ND		0.042	mg/Kg-dry	1	12/13/2016 05:36 AM
Toluene	ND		0.042	mg/Kg-dry	1	12/13/2016 05:36 AM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	12/13/2016 05:36 AM
Surr: 1,2-Dichloroethane-d4	*98.4*		*70-130*	*%REC*	1	12/13/2016 05:36 AM
Surr: 4-Bromofluorobenzene	*98.3*		*70-130*	*%REC*	1	12/13/2016 05:36 AM
Surr: Dibromofluoromethane	*84.2*		*70-130*	*%REC*	1	12/13/2016 05:36 AM
Surr: Toluene-d8	*99.4*		*70-130*	*%REC*	1	12/13/2016 05:36 AM
CHLORIDE			**A4500-CL E-97**		Prep: EXTRACT / 12/14/16	Analyst: **EVB**
Chloride	**36,000**		**1,200**	**mg/Kg-dry**	100	12/20/2016 04:18 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**17**		**0.050**	**% of sample**	1	12/13/2016 06:17 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *21-Dec-16*

Client: WPX Energy
Project: RDX 15-11 **Work Order:** 1612637
Sample ID: RDX 15-11-2 **Lab ID:** 1612637-02
Collection Date: 12/7/2016 10:20 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 12/13/16	Analyst: **IT**
DRO (C10-C28)	**61**		**5.6**	**mg/Kg-dry**	1	12/16/2016 11:51 AM
ORO (C28-C40)	**49**		**5.6**	**mg/Kg-dry**	1	12/16/2016 11:51 AM
Surr: 4-Terphenyl-d14	*62.5*		*39-133*	*%REC*	1	12/16/2016 11:51 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 12/12/16	Analyst: **IT**
GRO (C6-C10)	ND		3.2	mg/Kg-dry	1	12/12/2016 04:45 PM
Surr: Toluene-d8	*106*		*50-150*	*%REC*	1	12/12/2016 04:45 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 12/12/16	Analyst: **LSY**
Benzene	ND		0.039	mg/Kg-dry	1	12/13/2016 06:01 AM
Ethylbenzene	ND		0.039	mg/Kg-dry	1	12/13/2016 06:01 AM
m,p-Xylene	ND		0.078	mg/Kg-dry	1	12/13/2016 06:01 AM
o-Xylene	ND		0.039	mg/Kg-dry	1	12/13/2016 06:01 AM
Toluene	ND		0.039	mg/Kg-dry	1	12/13/2016 06:01 AM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	12/13/2016 06:01 AM
Surr: 1,2-Dichloroethane-d4	*98.4*		*70-130*	*%REC*	1	12/13/2016 06:01 AM
Surr: 4-Bromofluorobenzene	*98.6*		*70-130*	*%REC*	1	12/13/2016 06:01 AM
Surr: Dibromofluoromethane	*90.6*		*70-130*	*%REC*	1	12/13/2016 06:01 AM
Surr: Toluene-d8	*99.6*		*70-130*	*%REC*	1	12/13/2016 06:01 AM
CHLORIDE			**A4500-CL E-97**		Prep: EXTRACT / 12/14/16	Analyst: **EVB**
Chloride	**28,000**		**340**	**mg/Kg-dry**	30	12/20/2016 04:18 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**13**		**0.050**	**% of sample**	1	12/13/2016 06:17 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 21-Dec-16

Client: WPX Energy
Work Order: 1612637
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **95757** Instrument ID **GC8** Method: **SW8015M**

MBLK	Sample ID: **DBLKS1-95757-95757**			Units: **mg/Kg**			Analysis Date: **12/14/2016 09:17 PM**			
Client ID:	Run ID: **GC8_161214A**			SeqNo: **4205701**		Prep Date: **12/13/2016**		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
ORO (C28-C40)	ND	5.0								
Surr: 4-Terphenyl-d14	*2.339*	0	*3.33*	0	*70.3*	*39-133*	0			

LCS	Sample ID: **DLCSS1-95757-95757**			Units: **mg/Kg**			Analysis Date: **12/14/2016 09:46 PM**			
Client ID:	Run ID: **GC8_161214A**			SeqNo: **4205702**		Prep Date: **12/13/2016**		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	284	5.0	333	0	85.3	61-109	0			
ORO (C28-C40)	309.2	5.0	333	0	92.8	61-119	0			
Surr: 4-Terphenyl-d14	*1.978*	0	*3.33*	0	*59.4*	*39-133*	0			

MS	Sample ID: **1612637-02B MS**			Units: **mg/Kg**			Analysis Date: **12/16/2016 10:52 A**			
Client ID: **RDX 15-11-2**	Run ID: **GC8_161216A**			SeqNo: **4206579**		Prep Date: **12/13/2016**		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	167.7	5.0	330.4	53.12	34.7	48-110	0			S
ORO (C28-C40)	183.9	5.0	330.4	42.25	42.9	39-140	0			
Surr: 4-Terphenyl-d14	*1.483*	0	*3.304*	0	*44.9*	*39-133*	0			

MSD	Sample ID: **1612637-02B MSD**			Units: **mg/Kg**			Analysis Date: **12/16/2016 11:22 A**			
Client ID: **RDX 15-11-2**	Run ID: **GC8_161216A**			SeqNo: **4206580**		Prep Date: **12/13/2016**		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	281.2	4.9	325	53.12	70.2	48-110	167.7	50.5	30	R
ORO (C28-C40)	296	4.9	325	42.25	78.1	39-140	183.9	46.7	30	R
Surr: 4-Terphenyl-d14	*1.851*	0	*3.25*	0	*57*	*39-133*	1.483	*22.1*	*30*	

The following samples were analyzed in this batch: 1612637-01B 1612637-02B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1612637
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **95709** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **MBLK-95709-95709** Units: **µg/Kg-dry** Analysis Date: **12/12/2016 03:55 PM**
Client ID: Run ID: **GC9_161212A** SeqNo: **4199282** Prep Date: **12/12/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	*4869*	0	*5000*	0	*97.4*	*50-150*	0			

LCS Sample ID: **LCS-95709-95709** Units: **µg/Kg-dry** Analysis Date: **12/12/2016 03:30 PM**
Client ID: Run ID: **GC9_161212A** SeqNo: **4199281** Prep Date: **12/12/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	514600	2,500	500000	0	103	70-130	0			
Surr: Toluene-d8	*5502*	0	*5000*	0	*110*	*50-150*	0			

MS Sample ID: **1612637-01A MS** Units: **µg/Kg-dry** Analysis Date: **12/12/2016 06:50 PM**
Client ID: **RDX 15-11-1** Run ID: **GC9_161212A** SeqNo: **4199289** Prep Date: **12/12/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	762900	3,500	704800	0	108	70-130	0			
Surr: Toluene-d8	*7995*	0	*7048*	0	*113*	*50-150*	0			

MSD Sample ID: **1612637-01A MSD** Units: **µg/Kg-dry** Analysis Date: **12/12/2016 07:15 PM**
Client ID: **RDX 15-11-1** Run ID: **GC9_161212A** SeqNo: **4199290** Prep Date: **12/12/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	826200	3,500	704800	0	117	70-130	762900	7.96	30	
Surr: Toluene-d8	*8262*	0	*7048*	0	*117*	*50-150*	7995	*3.29*	*30*	

The following samples were analyzed in this batch: 1612637-01A 1612637-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1612637
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **95696** Instrument ID **VMS9** Method: **SW8260B**

MBLK Sample ID: **MBLK-95696-95696** Units: **µg/Kg-dry** Analysis Date: **12/12/2016 01:39 PM**
Client ID: Run ID: **VMS9_161212A** SeqNo: **4199496** Prep Date: **12/12/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30	0	0	0	0-0	0			
Ethylbenzene	ND	30	0	0	0	0-0	0			
m,p-Xylene	ND	60	0	0	0	0-0	0			
o-Xylene	ND	30	0	0	0	0-0	0			
Toluene	ND	30	0	0	0	0-0	0			
Xylenes, Total	ND	90	0	0	0	0-0	0			
Surr: 1,2-Dichloroethane-d4	*980.5*	0	*1000*	0	*98*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*971.5*	0	*1000*	0	*97.2*	*70-130*	0			
Surr: Dibromofluoromethane	*933.5*	0	*1000*	0	*93.4*	*70-130*	0			
Surr: Toluene-d8	*989.5*	0	*1000*	0	*99*	*70-130*	0			

LCS Sample ID: **LCS-95696-95696** Units: **µg/Kg-dry** Analysis Date: **12/12/2016 12:01 PM**
Client ID: Run ID: **VMS9_161212A** SeqNo: **4199491** Prep Date: **12/12/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1093	30	1000	0	109	75-125	0			
Ethylbenzene	1140	30	1000	0	114	75-125	0			
m,p-Xylene	2326	60	2000	0	116	80-125	0			
o-Xylene	1146	30	1000	0	115	75-125	0			
Toluene	1076	30	1000	0	108	70-125	0			
Xylenes, Total	3472	90	3000	0	116	75-125	0			
Surr: 1,2-Dichloroethane-d4	*964.5*	0	*1000*	0	*96.4*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1026*	0	*1000*	0	*103*	*70-130*	0			
Surr: Dibromofluoromethane	*1034*	0	*1000*	0	*103*	*70-130*	0			
Surr: Toluene-d8	*994*	0	*1000*	0	*99.4*	*70-130*	0			

MS Sample ID: **1612637-01A MS** Units: **µg/Kg-dry** Analysis Date: **12/13/2016 09:41 A**
Client ID: **RDX 15-11-1** Run ID: **VMS9_161212B** SeqNo: **4198991** Prep Date: **12/12/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1414	42	1410	0	100	75-125	0			
Ethylbenzene	1527	42	1410	0	108	75-125	0			
m,p-Xylene	3086	85	2819	0	109	80-125	0			
o-Xylene	1547	42	1410	0	110	75-125	0			
Toluene	1430	42	1410	0	101	70-125	0			
Xylenes, Total	4633	130	4229	0	110	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1337*	0	*1410*	0	*94.8*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1453*	0	*1410*	0	*103*	*70-130*	0			
Surr: Dibromofluoromethane	*1336*	0	*1410*	0	*94.8*	*70-130*	0			
Surr: Toluene-d8	*1411*	0	*1410*	0	*100*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1612637
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **95696** Instrument ID **VMS9** Method: **SW8260B**

MSD Sample ID: **1612637-01A MSD** Units: **µg/Kg-dry** Analysis Date: **12/13/2016 10:06 A**
Client ID: **RDX 15-11-1** Run ID: **VMS9_161212B** SeqNo: **4198992** Prep Date: **12/12/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1420	42	1410	0	101	75-125	1414	0.448	30	
Ethylbenzene	1510	42	1410	0	107	75-125	1527	1.16	30	
m,p-Xylene	3081	85	2819	0	109	80-125	3086	0.16	30	
o-Xylene	1563	42	1410	0	111	75-125	1547	1.04	30	
Toluene	1446	42	1410	0	103	70-125	1430	1.08	30	
Xylenes, Total	4645	130	4229	0	110	75-125	4633	0.243	30	
Surr: 1,2-Dichloroethane-d4	*1357*	0	*1410*	0	*96.3*	*70-130*	1337	*1.52*	*30*	
Surr: 4-Bromofluorobenzene	*1460*	0	*1410*	0	*104*	*70-130*	1453	*0.484*	*30*	
Surr: Dibromofluoromethane	*1370*	0	*1410*	0	*97.2*	*70-130*	1336	*2.55*	*30*	
Surr: Toluene-d8	*1411*	0	*1410*	0	*100*	*70-130*	1411	*0*	*30*	

The following samples were analyzed in this batch: 1612637-01A 1612637-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1612637
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **95849** Instrument ID **GALLERY** Method: **A4500-Cl E-97**

MBLK Sample ID: **MBLK-95849-95849** Units: **mg/Kg** Analysis Date: **12/20/2016 04:18 PM**
Client ID: Run ID: **GALLERY_161220B** SeqNo: **4213301** Prep Date: **12/14/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	10								

MS Sample ID: **1612543-01A MS** Units: **mg/Kg** Analysis Date: **12/20/2016 04:18 PM**
Client ID: Run ID: **GALLERY_161220B** SeqNo: **4213303** Prep Date: **12/14/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	777.1	9.8	492.1	307.7	95.4	75-125	0			

MSD Sample ID: **1612543-01A MSD** Units: **mg/Kg** Analysis Date: **12/20/2016 04:18 PM**
Client ID: Run ID: **GALLERY_161220B** SeqNo: **4213304** Prep Date: **12/14/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	765.2	9.9	495	307.7	92.4	75-125	777.1	1.53	25	

LCS1 Sample ID: **LCS1-95849-95849** Units: **mg/Kg** Analysis Date: **12/20/2016 04:18 PM**
Client ID: Run ID: **GALLERY_161220B** SeqNo: **4213307** Prep Date: **12/14/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	104.9	10	100	0	105	80-120	0			

LCS2 Sample ID: **LCS2-95849-95849** Units: **mg/Kg** Analysis Date: **12/20/2016 04:18 PM**
Client ID: Run ID: **GALLERY_161220B** SeqNo: **4213308** Prep Date: **12/14/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	508.9	10	500	0	102	80-120	0			

The following samples were analyzed in this batch: 1612637-01B 1612637-02B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1612637
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **R202468** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R202468** Units: **% of sample** Analysis Date: **12/13/2016 06:17 PM**
Client ID: Run ID: **MOIST_161213D** SeqNo: **4201379** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R202468** Units: **% of sample** Analysis Date: **12/13/2016 06:17 PM**
Client ID: Run ID: **MOIST_161213D** SeqNo: **4201377** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1612654-01B DUP** Units: **% of sample** Analysis Date: **12/13/2016 06:17 PM**
Client ID: Run ID: **MOIST_161213D** SeqNo: **4201371** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	15.21	0.050	0	0	0		15.59	2.47	20	

DUP Sample ID: **1612656-01B DUP** Units: **% of sample** Analysis Date: **12/13/2016 06:17 PM**
Client ID: Run ID: **MOIST_161213D** SeqNo: **4201373** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	19.94	0.050	0	0	0		20.22	1.39	20	

The following samples were analyzed in this batch: 1612637-01B 1612637-02B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER #	1612637				
SAMPLER		DATE	12/7/2016	PAGE	1 of 1
PROJECT NAME	RDX 15-11	SITE ID	RDX 15-11	TURNAROUND	5 day
DISPOSAL	By Lab or Return to Client				
PROJECT No.		EDD FORMAT			
		PURCHASE ORDER			
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy		
SEND REPORT TO	Blaney	INVOICE ATTN TO	Karolina Blaney		
ADDRESS		ADDRESS	5315 Buena Vista Dr		
CITY / STATE / ZIP		CITY / STATE / ZIP	Carlsbad, NM 88220		
PHONE		PHONE	970 589 0743		
FAX		FAX			
E-MAIL	Karolina.blaney@wpxenergy.com;	E-MAIL	Karolina.blaney@wpxenergy.com		

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	TPH DRO GRO ORO	BTEX 8260	Chloride
	RDX 15-11-1	S	12/7/2016	10:00	1	8	x	x	x	x
	RDX 15-11-2	S	12/7/2016	10:20	1	8	x	x	x	x

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

3.8

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	12/7/2016	15:00
RECEIVED BY	[signature]	JoE R. BAR	12/10/16	1015
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH [illegible] 6-NaHSO4 7-Other 8-4 degrees C 9-5035

FedEx Express

Package US Airbill

FedEx Tracking Number 8108 0927 4102

00037

00252

23476

1 From

Date 12-7-16 [redacted]

Sender's Name KAROLINA BLANEY Phone 970

Company WPX ENERGY

Address 5315 BUENA VISTA

City CARLSBAD State NM

2 Your Internal Billing Reference

3 To

Recipient's Name SAMPLE RECEIVING Phone

Company ALS ENVIRONMENTAL HOLLAND LAB

Address 3352 128TH AVE

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City HOLLAND

1.800.GoFedEx 1.800.463.3339

06222047

FedEx TRK# 0215 8108 0927 4102

SATURDAY

FIRST OVERNIGHT

X0 HLMA

4942

MI-US

GRR

FO

10:30

12 10

4102

FedEx Express Saver — Third business day. Saturday Delivery NOT available.

Recipient's Copy

MUR4

Packages up to 150 lbs.

2 or 3 Business Days

FedEx 2Day A.M. Second business morning. Saturday Delivery NOT available.

FedEx 2Day Second business afternoon. Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

Next Business Day

FedEx First Overnight Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight Next business afternoon. Saturday Delivery NOT available.

5 Packaging

FedEx Envelope

FedEx Pak

FedEx Box

FedEx Tube

Other

6 Special Handling and Delivery Signature Options

[X] Saturday Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required

Direct Signature Someone at recipient's address may sign for delivery.

Indirect Signature If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

Yes Shipper's Declaration not required

Dry Ice Dry Ice, 9, UN 1845

Cargo Aircraft Only

7 Payment Bill to:

Sender Acct. No. in Section 1 will be billed.

[X] Recipient

Third Party

Credit Card

Cash/Check

Enter FedEx Acct. No. or Credit Card No. below. [redacted]

Total Packages

Total Weight 18 lbs.

Credit Card Auth.

Rev. Date ©1994-2015 FedEx • PRINTED IN U.S.A.

611

fedex.com 1.800.GoFedEx 1.800.463.3339

FedEx SDR Delivery

151956 10/04 MWI

ALS Group, USA

Sample Receipt Checklist

Client Name: **WPX - NM** Date/Time Received: **10-Dec-16 10:15**

Work Order: **1612637** Received by: **JR**

Checklist completed by Joseph Ribar (eSignature) 10-Dec-16 (Date) Reviewed by: Joseph Ribar (eSignature) 10-Dec-16 (Date)

Matrices: soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.8C/3.8C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	12/10/2016 10:26:44 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

15-Mar-2017

Karolina Blaney
WPX Energy
5315 Buena Vista Dr.
Carlsbad, NM 88220

Re: **RDX 15-11** Work Order: **1703438**

Dear Karolina,

ALS Environmental received 6 samples on 08-Mar-2017 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 13.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

Report of Laboratory Analysis

ALS Group, USA

Date: 15-Mar-17

Client: WPX Energy
Project: RDX 15-11
Work Order: **1703438**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1703438-01	RDX 15-11-3 1'	Soil		3/2/2017 09:30	3/8/2017 09:30	☐
1703438-02	RDX 15-11-3 2'	Soil		3/2/2017 09:35	3/8/2017 09:30	☐
1703438-03	RDX 15-11-3 3'	Soil		3/2/2017 09:40	3/8/2017 09:30	☐
1703438-04	RDX 15-11-4 1'	Soil		3/2/2017 09:45	3/8/2017 09:30	☐
1703438-05	RDX 15-11-4 2'	Soil		3/2/2017 09:50	3/8/2017 09:30	☐
1703438-06	RDX 15-11-4 3'	Soil		3/2/2017 09:55	3/8/2017 09:30	☐

ALS Group, USA

Date: 15-Mar-17

Client: WPX Energy
Project: RDX 15-11
WorkOrder: **1703438**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: *15-Mar-17*

Client: WPX Energy
Project: RDX 15-11
Sample ID: RDX 15-11-3 1'
Collection Date: 3/2/2017 09:30 AM

Work Order: 1703438
Lab ID: 1703438-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			**A4500-CL E-97**		Prep: EXTRACT / 3/14/17	Analyst: **EVB**
Chloride	**7,200**		**120**	**mg/Kg-dry**	10	3/14/2017 02:21 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**16**		**0.050**	**% of sample**	1	3/8/2017 04:24 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *15-Mar-17*

Client: WPX Energy
Project: RDX 15-11 **Work Order:** 1703438
Sample ID: RDX 15-11-3 2' **Lab ID:** 1703438-02
Collection Date: 3/2/2017 09:35 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			**A4500-CL E-97**		Prep: EXTRACT / 3/14/17	Analyst: **EVB**
Chloride	**360**		**11**	**mg/Kg-dry**	1	3/14/2017 02:21 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**13**		**0.050**	**% of sample**	1	3/8/2017 04:24 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *15-Mar-17*

Client: WPX Energy
Project: RDX 15-11 **Work Order:** 1703438
Sample ID: RDX 15-11-3 3' **Lab ID:** 1703438-03
Collection Date: 3/2/2017 09:40 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			**A4500-CL E-97**		Prep: EXTRACT / 3/14/17	Analyst: **EVB**
Chloride	**410**		**13**	**mg/Kg-dry**	1	3/14/2017 02:21 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**24**		**0.050**	**% of sample**	1	3/8/2017 04:24 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *15-Mar-17*

Client: WPX Energy
Project: RDX 15-11
Sample ID: RDX 15-11-4 1'
Collection Date: 3/2/2017 09:45 AM

Work Order: 1703438
Lab ID: 1703438-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			**A4500-CL E-97**		Prep: EXTRACT / 3/14/17	Analyst: **EVB**
Chloride	**9,400**		**120**	**mg/Kg-dry**	10	3/14/2017 02:21 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**17**		**0.050**	**% of sample**	1	3/8/2017 04:24 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *15-Mar-17*

Client: WPX Energy
Project: RDX 15-11 **Work Order:** 1703438
Sample ID: RDX 15-11-4 2' **Lab ID:** 1703438-05
Collection Date: 3/2/2017 09:50 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			**A4500-CL E-97**		Prep: EXTRACT / 3/14/17	Analyst: **EVB**
Chloride	**590**		**12**	**mg/Kg-dry**	1	3/14/2017 02:21 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**14**		**0.050**	**% of sample**	1	3/8/2017 04:24 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *15-Mar-17*

Client: WPX Energy
Project: RDX 15-11
Sample ID: RDX 15-11-4 3'
Collection Date: 3/2/2017 09:55 AM

Work Order: 1703438
Lab ID: 1703438-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			**A4500-CL E-97**		Prep: EXTRACT / 3/14/17	Analyst: **EVB**
Chloride	**1,100**		**46**	**mg/Kg-dry**	4	3/14/2017 02:21 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**13**		**0.050**	**% of sample**	1	3/8/2017 04:24 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 15-Mar-17

Client: WPX Energy
Work Order: 1703438
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **99239** Instrument ID **GALLERY** Method: **A4500-Cl E-97**

MBLK Sample ID: **MBLK-99239-99239** Units: **mg/Kg** Analysis Date: **3/14/2017 02:21 PM**
Client ID: Run ID: **GALLERY_170314A** SeqNo: **4325471** Prep Date: **3/14/2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	10								

MS Sample ID: **1703431-02A MS** Units: **mg/Kg** Analysis Date: **3/14/2017 02:21 PM**
Client ID: Run ID: **GALLERY_170314A** SeqNo: **4325529** Prep Date: **3/14/2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	610.2	10	499	76.74	107	75-125	0			

MSD Sample ID: **1703431-02A MSD** Units: **mg/Kg** Analysis Date: **3/14/2017 02:21 PM**
Client ID: Run ID: **GALLERY_170314A** SeqNo: **4325530** Prep Date: **3/14/2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	618.1	10	499	76.74	108	75-125	610.2	1.28	25	

LCS1 Sample ID: **LCS1-99239-99239** Units: **mg/Kg** Analysis Date: **3/14/2017 02:21 PM**
Client ID: Run ID: **GALLERY_170314A** SeqNo: **4325472** Prep Date: **3/14/2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	96.55	10	100	0	96.6	80-120	0			

LCS2 Sample ID: **LCS2-99239-99239** Units: **mg/Kg** Analysis Date: **3/14/2017 02:21 PM**
Client ID: Run ID: **GALLERY_170314A** SeqNo: **4325517** Prep Date: **3/14/2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	483	10	500	0	96.6	80-120	0			

The following samples were analyzed in this batch:

1703438-01A	1703438-02A	1703438-03A
1703438-04A	1703438-05A	1703438-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1703438
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **R207349** Instrument ID **MOIST** Method: **SW3550C**

MBLK	Sample ID: **WBLKS-R207349**				Units: **% of sample**		Analysis Date: **3/8/2017 04:24 PM**			
Client ID:	Run ID: **MOIST_170308C**				SeqNo: **4316737**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS	Sample ID: **LCS-R207349**				Units: **% of sample**		Analysis Date: **3/8/2017 04:24 PM**			
Client ID:	Run ID: **MOIST_170308C**				SeqNo: **4316736**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP	Sample ID: **1703431-02A DUP**				Units: **% of sample**		Analysis Date: **3/8/2017 04:24 PM**			
Client ID:	Run ID: **MOIST_170308C**				SeqNo: **4316715**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	7.99	0.050	0	0	0		7.95	0.502	5	

DUP	Sample ID: **1703438-05A DUP**				Units: **% of sample**		Analysis Date: **3/8/2017 04:24 PM**			
Client ID: **RDX 15-11-4 2'**	Run ID: **MOIST_170308C**				SeqNo: **4316727**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	14.06	0.050	0	0	0		14.09	0.213	5	

The following samples were analyzed in this batch:

1703438-01A	1703438-02A	1703438-03A
1703438-04A	1703438-05A	1703438-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r6

WORKORDER # 1703438

		SAMPLER		DATE	3/7/2017	PAGE	1 of 1
PROJECT NAME	RDX 15-11	SITE ID	RDX 15-11	TURNAROUND	5 day	DISPOSAL	By Lab or Return to Client
PROJECT No.		EDD FORMAT					
		PURCHASE ORDER					
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy				
SEND REPORT TO	Blaney	INVOICE ATTN TO	Karolina Blaney				
ADDRESS		ADDRESS	5315 Buena Vista Dr				
CITY / STATE / ZIP		CITY / STATE / ZIP	Carlsbad, NM 88220				
PHONE		PHONE	970 589 0743				
FAX		FAX					
E-MAIL	Karolina.blaney@wpxenergy.com;	E-MAIL	Karolina.blaney@wpxenergy.com				

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	Chloride
1	RDX 15-11-3 1'	S	3/2/2017	9:30	1	8	x	x
2	RDX 15-11-3 2'	S	3/2/2017	9:35	1	8	x	x
3	RDX 15-11-3 3'	S	3/2/2017	9:40	1	8	x	x
4	RDX 15-11-4 1'	S	3/2/2017	9:45	1	8	x	x
5	RDX 15-11-4 2'	S	3/2/2017	9:50	1	8	x	x
6	RDX 15-11-4 3'	S	3/2/2017	9:55	1	8	x	x

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	3/7/2017	15:00
RECEIVED BY	MBroadbent	MBroadbent	3/8/17	950
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

ALS Group, USA

Sample Receipt Checklist

Client Name: **WPX - NM** Date/Time Received: **08-Mar-17 09:30**

Work Order: **1703438** Received by: **MBB**

Checklist completed by Meghan Broadbent (eSignature) 08-Mar-17 (Date) Reviewed by: Chad Whelton (eSignature) 08-Mar-17 (Date)

Matrices: soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.0/3.0	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	3/8/2017 11:39:50 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	_		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

02-Feb-2018

James Raley
WPX Energy
5315 Buena Vista Dr.
Carlsbad, NM 88220

Re: **RDX 15-11** Work Order: **18011341**

Dear James,

ALS Environmental received 15 samples on 26-Jan-2018 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 32.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

Report of Laboratory Analysis

ALS Group, USA

Date: 02-Feb-18

Client: WPX Energy
Project: RDX 15-11
Work Order: **18011341**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
18011341-01	S1 (0-2 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-02	S1 (2-4 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-03	S1 (4-6 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-04	S2 (0-2 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-05	S2 (2-4 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-06	S2 (4-6 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-07	S3 (0-2 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-08	S3 (2-4 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-09	S3 (4-6 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-10	S4 (0-2 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-11	S4 (2-4 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-12	S4 (4-6 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-13	S5 (0-2 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-14	S5 (2-4 ft)	Soil		1/23/2018	1/26/2018 09:30	☐
18011341-15	S5 (4-6 ft)	Soil		1/23/2018	1/26/2018 09:30	☐

ALS Group, USA

Date: 02-Feb-18

Client: WPX Energy
Project: RDX 15-11
Work Order: 18011341

Case Narrative

Batch 113626, Method DRLVI_8015_S, Sample 18011341-13A MS/MSD: The MS/MSD recovery was below the lower control limit for DRO/ORO. The corresponding result in the parent sample may be biased low.

Batch R229228, Method MOISTURE, Sample 18011341-01A DUP: RPD is outside of test defined limits for moisture. Results should be considered estimated.

ALS Group, USA

Date: 02-Feb-18

Client: WPX Energy
Project: RDX 15-11
WorkOrder: **18011341**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S1 (0-2 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/30/18 13:46		Analyst: **MEB**
DRO (C10-C28)	**210**		**7.0**	**mg/Kg-dry**	1	1/31/2018 02:26 AM
ORO (C28-C40)	**71**		**7.0**	**mg/Kg-dry**	1	1/31/2018 02:26 AM
Surr: 4-Terphenyl-d14	*95.6*		*34-130*	*%REC*	1	1/31/2018 02:26 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		9.1	mg/Kg-dry	1	1/30/2018 05:05 AM
Surr: Toluene-d8	*102*		*71-123*	*%REC*	1	1/30/2018 05:05 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **BG**
Benzene	ND		0.055	mg/Kg-dry	1	1/30/2018 12:06 PM
Ethylbenzene	ND		0.055	mg/Kg-dry	1	1/30/2018 12:06 PM
m,p-Xylene	ND		0.11	mg/Kg-dry	1	1/30/2018 12:06 PM
o-Xylene	ND		0.055	mg/Kg-dry	1	1/30/2018 12:06 PM
Toluene	ND		0.055	mg/Kg-dry	1	1/30/2018 12:06 PM
Xylenes, Total	ND		0.16	mg/Kg-dry	1	1/30/2018 12:06 PM
Surr: 1,2-Dichloroethane-d4	*102*		*70-130*	*%REC*	1	1/30/2018 12:06 PM
Surr: 4-Bromofluorobenzene	*98.0*		*70-130*	*%REC*	1	1/30/2018 12:06 PM
Surr: Dibromofluoromethane	*95.7*		*70-130*	*%REC*	1	1/30/2018 12:06 PM
Surr: Toluene-d8	*97.6*		*70-130*	*%REC*	1	1/30/2018 12:06 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**8,300**		**140**	**mg/Kg-dry**	10	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**29**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11 **Work Order:** 18011341
Sample ID: S1 (2-4 ft) **Lab ID:** 18011341-02
Collection Date: 1/23/2018 **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/30/18 13:46		Analyst: **MEB**
DRO (C10-C28)	ND		11	mg/Kg-dry	1	1/31/2018 02:55 AM
ORO (C28-C40)	ND		11	mg/Kg-dry	1	1/31/2018 02:55 AM
Surr: 4-Terphenyl-d14	*77.6*		*34-130*	*%REC*	1	1/31/2018 02:55 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		7.7	mg/Kg-dry	1	1/30/2018 06:33 AM
Surr: Toluene-d8	*101*		*71-123*	*%REC*	1	1/30/2018 06:33 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **BG**
Benzene	ND		0.046	mg/Kg-dry	1	1/30/2018 12:21 PM
Ethylbenzene	ND		0.046	mg/Kg-dry	1	1/30/2018 12:21 PM
m,p-Xylene	ND		0.092	mg/Kg-dry	1	1/30/2018 12:21 PM
o-Xylene	ND		0.046	mg/Kg-dry	1	1/30/2018 12:21 PM
Toluene	ND		0.046	mg/Kg-dry	1	1/30/2018 12:21 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/30/2018 12:21 PM
Surr: 1,2-Dichloroethane-d4	*100*		*70-130*	*%REC*	1	1/30/2018 12:21 PM
Surr: 4-Bromofluorobenzene	*97.4*		*70-130*	*%REC*	1	1/30/2018 12:21 PM
Surr: Dibromofluoromethane	*98.0*		*70-130*	*%REC*	1	1/30/2018 12:21 PM
Surr: Toluene-d8	*95.8*		*70-130*	*%REC*	1	1/30/2018 12:21 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**620**		**12**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**21**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S1 (4-6 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/30/18 13:46		Analyst: **MEB**
DRO (C10-C28)	ND		12	mg/Kg-dry	1	1/31/2018 03:24 AM
ORO (C28-C40)	ND		12	mg/Kg-dry	1	1/31/2018 03:24 AM
Surr: 4-Terphenyl-d14	*79.1*		*34-130*	*%REC*	1	1/31/2018 03:24 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		8.5	mg/Kg-dry	1	1/30/2018 07:02 AM
Surr: Toluene-d8	*101*		*71-123*	*%REC*	1	1/30/2018 07:02 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **BG**
Benzene	ND		0.051	mg/Kg-dry	1	1/30/2018 12:37 PM
Ethylbenzene	ND		0.051	mg/Kg-dry	1	1/30/2018 12:37 PM
m,p-Xylene	ND		0.10	mg/Kg-dry	1	1/30/2018 12:37 PM
o-Xylene	ND		0.051	mg/Kg-dry	1	1/30/2018 12:37 PM
Toluene	ND		0.051	mg/Kg-dry	1	1/30/2018 12:37 PM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	1/30/2018 12:37 PM
Surr: 1,2-Dichloroethane-d4	*100*		*70-130*	*%REC*	1	1/30/2018 12:37 PM
Surr: 4-Bromofluorobenzene	*97.4*		*70-130*	*%REC*	1	1/30/2018 12:37 PM
Surr: Dibromofluoromethane	*95.9*		*70-130*	*%REC*	1	1/30/2018 12:37 PM
Surr: Toluene-d8	*97.2*		*70-130*	*%REC*	1	1/30/2018 12:37 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**630**		**13**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**26**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S2 (0-2 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	**1,300**		**6.8**	**mg/Kg-dry**	1	1/31/2018 09:21 PM
ORO (C28-C40)	**500**		**6.8**	**mg/Kg-dry**	1	1/31/2018 09:21 PM
Surr: 4-Terphenyl-d14	*67.1*		*34-130*	*%REC*	1	1/31/2018 09:21 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		8.7	mg/Kg-dry	1	1/30/2018 07:32 AM
Surr: Toluene-d8	*100*		*71-123*	*%REC*	1	1/30/2018 07:32 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **BG**
Benzene	ND		0.052	mg/Kg-dry	1	1/30/2018 12:52 PM
Ethylbenzene	ND		0.052	mg/Kg-dry	1	1/30/2018 12:52 PM
m,p-Xylene	ND		0.10	mg/Kg-dry	1	1/30/2018 12:52 PM
o-Xylene	ND		0.052	mg/Kg-dry	1	1/30/2018 12:52 PM
Toluene	ND		0.052	mg/Kg-dry	1	1/30/2018 12:52 PM
Xylenes, Total	ND		0.16	mg/Kg-dry	1	1/30/2018 12:52 PM
Surr: 1,2-Dichloroethane-d4	*102*		*70-130*	*%REC*	1	1/30/2018 12:52 PM
Surr: 4-Bromofluorobenzene	*97.0*		*70-130*	*%REC*	1	1/30/2018 12:52 PM
Surr: Dibromofluoromethane	*99.6*		*70-130*	*%REC*	1	1/30/2018 12:52 PM
Surr: Toluene-d8	*95.1*		*70-130*	*%REC*	1	1/30/2018 12:52 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**13,000**		**140**	**mg/Kg-dry**	10	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**27**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11 **Work Order:** 18011341
Sample ID: S2 (2-4 ft) **Lab ID:** 18011341-05
Collection Date: 1/23/2018 **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		6.5	mg/Kg-dry	1	1/31/2018 09:50 PM
ORO (C28-C40)	ND		6.5	mg/Kg-dry	1	1/31/2018 09:50 PM
Surr: 4-Terphenyl-d14	*57.6*		*34-130*	*%REC*	1	1/31/2018 09:50 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		8.5	mg/Kg-dry	1	1/30/2018 08:01 AM
Surr: Toluene-d8	*100*		*71-123*	*%REC*	1	1/30/2018 08:01 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **BG**
Benzene	ND		0.051	mg/Kg-dry	1	1/30/2018 01:07 AM
Ethylbenzene	ND		0.051	mg/Kg-dry	1	1/30/2018 01:07 AM
m,p-Xylene	ND		0.10	mg/Kg-dry	1	1/30/2018 01:07 AM
o-Xylene	ND		0.051	mg/Kg-dry	1	1/30/2018 01:07 AM
Toluene	ND		0.051	mg/Kg-dry	1	1/30/2018 01:07 AM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	1/30/2018 01:07 AM
Surr: 1,2-Dichloroethane-d4	*104*		*70-130*	*%REC*	1	1/30/2018 01:07 AM
Surr: 4-Bromofluorobenzene	*99.0*		*70-130*	*%REC*	1	1/30/2018 01:07 AM
Surr: Dibromofluoromethane	*99.0*		*70-130*	*%REC*	1	1/30/2018 01:07 AM
Surr: Toluene-d8	*98.8*		*70-130*	*%REC*	1	1/30/2018 01:07 AM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**420**		**14**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**26**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11 **Work Order:** 18011341
Sample ID: S2 (4-6 ft) **Lab ID:** 18011341-06
Collection Date: 1/23/2018 **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		6.6	mg/Kg-dry	1	1/31/2018 10:19 PM
ORO (C28-C40)	ND		6.6	mg/Kg-dry	1	1/31/2018 10:19 PM
Surr: 4-Terphenyl-d14	*59.1*		*34-130*	*%REC*	1	1/31/2018 10:19 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		8.3	mg/Kg-dry	1	1/30/2018 08:30 AM
Surr: Toluene-d8	*101*		*71-123*	*%REC*	1	1/30/2018 08:30 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.050	mg/Kg-dry	1	1/29/2018 09:35 PM
Ethylbenzene	ND		0.050	mg/Kg-dry	1	1/29/2018 09:35 PM
m,p-Xylene	ND		0.10	mg/Kg-dry	1	1/29/2018 09:35 PM
o-Xylene	ND		0.050	mg/Kg-dry	1	1/29/2018 09:35 PM
Toluene	ND		0.050	mg/Kg-dry	1	1/29/2018 09:35 PM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	1/29/2018 09:35 PM
Surr: 1,2-Dichloroethane-d4	*100*		*70-130*	*%REC*	1	1/29/2018 09:35 PM
Surr: 4-Bromofluorobenzene	*95.1*		*70-130*	*%REC*	1	1/29/2018 09:35 PM
Surr: Dibromofluoromethane	*99.4*		*70-130*	*%REC*	1	1/29/2018 09:35 PM
Surr: Toluene-d8	*97.4*		*70-130*	*%REC*	1	1/29/2018 09:35 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**330**		**13**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**25**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S3 (0-2 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		6.6	mg/Kg-dry	1	1/31/2018 10:48 PM
ORO (C28-C40)	ND		6.6	mg/Kg-dry	1	1/31/2018 10:48 PM
Surr: 4-Terphenyl-d14	*52.6*		*34-130*	*%REC*	1	1/31/2018 10:48 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		8.3	mg/Kg-dry	1	1/30/2018 09:00 AM
Surr: Toluene-d8	*101*		*71-123*	*%REC*	1	1/30/2018 09:00 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.050	mg/Kg-dry	1	1/29/2018 09:51 PM
Ethylbenzene	ND		0.050	mg/Kg-dry	1	1/29/2018 09:51 PM
m,p-Xylene	ND		0.10	mg/Kg-dry	1	1/29/2018 09:51 PM
o-Xylene	ND		0.050	mg/Kg-dry	1	1/29/2018 09:51 PM
Toluene	ND		0.050	mg/Kg-dry	1	1/29/2018 09:51 PM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	1/29/2018 09:51 PM
Surr: 1,2-Dichloroethane-d4	*102*		*70-130*	*%REC*	1	1/29/2018 09:51 PM
Surr: 4-Bromofluorobenzene	*97.2*		*70-130*	*%REC*	1	1/29/2018 09:51 PM
Surr: Dibromofluoromethane	*98.7*		*70-130*	*%REC*	1	1/29/2018 09:51 PM
Surr: Toluene-d8	*98.2*		*70-130*	*%REC*	1	1/29/2018 09:51 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**14**		**13**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**25**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S3 (2-4 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		6.4	mg/Kg-dry	1	1/31/2018 11:17 PM
ORO (C28-C40)	ND		6.4	mg/Kg-dry	1	1/31/2018 11:17 PM
Surr: 4-Terphenyl-d14	*56.6*		*34-130*	*%REC*	1	1/31/2018 11:17 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		8.3	mg/Kg-dry	1	1/30/2018 09:29 AM
Surr: Toluene-d8	*102*		*71-123*	*%REC*	1	1/30/2018 09:29 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.050	mg/Kg-dry	1	1/29/2018 10:06 PM
Ethylbenzene	ND		0.050	mg/Kg-dry	1	1/29/2018 10:06 PM
m,p-Xylene	ND		0.10	mg/Kg-dry	1	1/29/2018 10:06 PM
o-Xylene	ND		0.050	mg/Kg-dry	1	1/29/2018 10:06 PM
Toluene	ND		0.050	mg/Kg-dry	1	1/29/2018 10:06 PM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	1/29/2018 10:06 PM
Surr: 1,2-Dichloroethane-d4	*103*		*70-130*	*%REC*	1	1/29/2018 10:06 PM
Surr: 4-Bromofluorobenzene	*91.8*		*70-130*	*%REC*	1	1/29/2018 10:06 PM
Surr: Dibromofluoromethane	*101*		*70-130*	*%REC*	1	1/29/2018 10:06 PM
Surr: Toluene-d8	*98.8*		*70-130*	*%REC*	1	1/29/2018 10:06 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	ND		13	mg/Kg-dry	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**25**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S3 (4-6 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-09
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		6.6	mg/Kg-dry	1	1/31/2018 11:46 PM
ORO (C28-C40)	ND		6.6	mg/Kg-dry	1	1/31/2018 11:46 PM
Surr: 4-Terphenyl-d14	*69.6*		*34-130*	*%REC*	1	1/31/2018 11:46 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		8.5	mg/Kg-dry	1	1/30/2018 09:59 AM
Surr: Toluene-d8	*101*		*71-123*	*%REC*	1	1/30/2018 09:59 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.051	mg/Kg-dry	1	1/29/2018 10:22 PM
Ethylbenzene	ND		0.051	mg/Kg-dry	1	1/29/2018 10:22 PM
m,p-Xylene	ND		0.10	mg/Kg-dry	1	1/29/2018 10:22 PM
o-Xylene	ND		0.051	mg/Kg-dry	1	1/29/2018 10:22 PM
Toluene	ND		0.051	mg/Kg-dry	1	1/29/2018 10:22 PM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	1/29/2018 10:22 PM
Surr: 1,2-Dichloroethane-d4	*103*		*70-130*	*%REC*	1	1/29/2018 10:22 PM
Surr: 4-Bromofluorobenzene	*93.4*		*70-130*	*%REC*	1	1/29/2018 10:22 PM
Surr: Dibromofluoromethane	*100*		*70-130*	*%REC*	1	1/29/2018 10:22 PM
Surr: Toluene-d8	*97.4*		*70-130*	*%REC*	1	1/29/2018 10:22 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**62**		**14**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**26**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S4 (0-2 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-10
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		5.7	mg/Kg-dry	1	2/1/2018 12:15 PM
ORO (C28-C40)	ND		5.7	mg/Kg-dry	1	2/1/2018 12:15 PM
Surr: 4-Terphenyl-d14	*65.1*		*34-130*	*%REC*	1	2/1/2018 12:15 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		6.6	mg/Kg-dry	1	1/30/2018 10:28 AM
Surr: Toluene-d8	*100*		*71-123*	*%REC*	1	1/30/2018 10:28 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.040	mg/Kg-dry	1	1/29/2018 10:37 PM
Ethylbenzene	ND		0.040	mg/Kg-dry	1	1/29/2018 10:37 PM
m,p-Xylene	ND		0.080	mg/Kg-dry	1	1/29/2018 10:37 PM
o-Xylene	ND		0.040	mg/Kg-dry	1	1/29/2018 10:37 PM
Toluene	ND		0.040	mg/Kg-dry	1	1/29/2018 10:37 PM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	1/29/2018 10:37 PM
Surr: 1,2-Dichloroethane-d4	*104*		*70-130*	*%REC*	1	1/29/2018 10:37 PM
Surr: 4-Bromofluorobenzene	*94.2*		*70-130*	*%REC*	1	1/29/2018 10:37 PM
Surr: Dibromofluoromethane	*98.8*		*70-130*	*%REC*	1	1/29/2018 10:37 PM
Surr: Toluene-d8	*98.4*		*70-130*	*%REC*	1	1/29/2018 10:37 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**15**		**12**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**14**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S4 (2-4 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-11
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		8.3	mg/Kg-dry	1	2/1/2018 01:14 AM
ORO (C28-C40)	ND		8.3	mg/Kg-dry	1	2/1/2018 01:14 AM
Surr: 4-Terphenyl-d14	*70.1*		*34-130*	*%REC*	1	2/1/2018 01:14 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		8.2	mg/Kg-dry	1	1/30/2018 10:57 AM
Surr: Toluene-d8	*99.7*		*71-123*	*%REC*	1	1/30/2018 10:57 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.049	mg/Kg-dry	1	1/29/2018 10:53 PM
Ethylbenzene	ND		0.049	mg/Kg-dry	1	1/29/2018 10:53 PM
m,p-Xylene	ND		0.098	mg/Kg-dry	1	1/29/2018 10:53 PM
o-Xylene	ND		0.049	mg/Kg-dry	1	1/29/2018 10:53 PM
Toluene	ND		0.049	mg/Kg-dry	1	1/29/2018 10:53 PM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	1/29/2018 10:53 PM
Surr: 1,2-Dichloroethane-d4	*103*		*70-130*	*%REC*	1	1/29/2018 10:53 PM
Surr: 4-Bromofluorobenzene	*95.3*		*70-130*	*%REC*	1	1/29/2018 10:53 PM
Surr: Dibromofluoromethane	*98.4*		*70-130*	*%REC*	1	1/29/2018 10:53 PM
Surr: Toluene-d8	*97.6*		*70-130*	*%REC*	1	1/29/2018 10:53 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**34**		**13**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**24**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S4 (4-6 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-12
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		7.5	mg/Kg-dry	1	2/1/2018 01:43 AM
ORO (C28-C40)	ND		7.5	mg/Kg-dry	1	2/1/2018 01:43 AM
Surr: 4-Terphenyl-d14	*69.1*		*34-130*	*%REC*	1	2/1/2018 01:43 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		7.7	mg/Kg-dry	1	1/30/2018 12:25 PM
Surr: Toluene-d8	*100*		*71-123*	*%REC*	1	1/30/2018 12:25 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.046	mg/Kg-dry	1	1/29/2018 11:09 PM
Ethylbenzene	ND		0.046	mg/Kg-dry	1	1/29/2018 11:09 PM
m,p-Xylene	ND		0.092	mg/Kg-dry	1	1/29/2018 11:09 PM
o-Xylene	ND		0.046	mg/Kg-dry	1	1/29/2018 11:09 PM
Toluene	ND		0.046	mg/Kg-dry	1	1/29/2018 11:09 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/29/2018 11:09 PM
Surr: 1,2-Dichloroethane-d4	*104*		*70-130*	*%REC*	1	1/29/2018 11:09 PM
Surr: 4-Bromofluorobenzene	*92.8*		*70-130*	*%REC*	1	1/29/2018 11:09 PM
Surr: Dibromofluoromethane	*100*		*70-130*	*%REC*	1	1/29/2018 11:09 PM
Surr: Toluene-d8	*96.6*		*70-130*	*%REC*	1	1/29/2018 11:09 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**69**		**12**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**21**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11 **Work Order:** 18011341
Sample ID: S5 (0-2 ft) **Lab ID:** 18011341-13
Collection Date: 1/23/2018 **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		5.3	mg/Kg-dry	1	1/31/2018 07:53 PM
ORO (C28-C40)	ND		5.3	mg/Kg-dry	1	1/31/2018 07:53 PM
Surr: 4-Terphenyl-d14	*46.0*		*34-130*	*%REC*	1	1/31/2018 07:53 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		5.8	mg/Kg-dry	1	1/30/2018 12:55 PM
Surr: Toluene-d8	*101*		*71-123*	*%REC*	1	1/30/2018 12:55 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.035	mg/Kg-dry	1	1/29/2018 11:24 PM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	1/29/2018 11:24 PM
m,p-Xylene	ND		0.070	mg/Kg-dry	1	1/29/2018 11:24 PM
o-Xylene	ND		0.035	mg/Kg-dry	1	1/29/2018 11:24 PM
Toluene	ND		0.035	mg/Kg-dry	1	1/29/2018 11:24 PM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	1/29/2018 11:24 PM
Surr: 1,2-Dichloroethane-d4	*104*		*70-130*	*%REC*	1	1/29/2018 11:24 PM
Surr: 4-Bromofluorobenzene	*94.5*		*70-130*	*%REC*	1	1/29/2018 11:24 PM
Surr: Dibromofluoromethane	*97.6*		*70-130*	*%REC*	1	1/29/2018 11:24 PM
Surr: Toluene-d8	*99.2*		*70-130*	*%REC*	1	1/29/2018 11:24 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	ND		11	mg/Kg-dry	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**7.5**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S5 (2-4 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-14
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		6.3	mg/Kg-dry	1	2/1/2018 02:12 AM
ORO (C28-C40)	ND		6.3	mg/Kg-dry	1	2/1/2018 02:12 AM
Surr: 4-Terphenyl-d14	*58.6*		*34-130*	*%REC*	1	2/1/2018 02:12 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		7.8	mg/Kg-dry	1	1/30/2018 01:24 PM
Surr: Toluene-d8	*101*		*71-123*	*%REC*	1	1/30/2018 01:24 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.047	mg/Kg-dry	1	1/29/2018 11:40 PM
Ethylbenzene	ND		0.047	mg/Kg-dry	1	1/29/2018 11:40 PM
m,p-Xylene	ND		0.094	mg/Kg-dry	1	1/29/2018 11:40 PM
o-Xylene	ND		0.047	mg/Kg-dry	1	1/29/2018 11:40 PM
Toluene	ND		0.047	mg/Kg-dry	1	1/29/2018 11:40 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/29/2018 11:40 PM
Surr: 1,2-Dichloroethane-d4	*107*		*70-130*	*%REC*	1	1/29/2018 11:40 PM
Surr: 4-Bromofluorobenzene	*92.3*		*70-130*	*%REC*	1	1/29/2018 11:40 PM
Surr: Dibromofluoromethane	*99.7*		*70-130*	*%REC*	1	1/29/2018 11:40 PM
Surr: Toluene-d8	*96.6*		*70-130*	*%REC*	1	1/29/2018 11:40 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**140**		**13**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**22**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Feb-18*

Client: WPX Energy
Project: RDX 15-11
Sample ID: S5 (4-6 ft)
Collection Date: 1/23/2018

Work Order: 18011341
Lab ID: 18011341-15
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 1/31/18 12:25		Analyst: **MEB**
DRO (C10-C28)	ND		6.7	mg/Kg-dry	1	2/1/2018 02:41 AM
ORO (C28-C40)	ND		6.7	mg/Kg-dry	1	2/1/2018 02:41 AM
Surr: 4-Terphenyl-d14	*65.6*		*34-130*	*%REC*	1	2/1/2018 02:41 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 1/29/18 16:08		Analyst: **MEB**
GRO (C6-C10)	ND		8.5	mg/Kg-dry	1	1/30/2018 01:54 PM
Surr: Toluene-d8	*101*		*71-123*	*%REC*	1	1/30/2018 01:54 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**	Prep: SW5035 1/29/18 14:02		Analyst: **WH**
Benzene	ND		0.051	mg/Kg-dry	1	1/29/2018 11:55 PM
Ethylbenzene	ND		0.051	mg/Kg-dry	1	1/29/2018 11:55 PM
m,p-Xylene	ND		0.10	mg/Kg-dry	1	1/29/2018 11:55 PM
o-Xylene	ND		0.051	mg/Kg-dry	1	1/29/2018 11:55 PM
Toluene	ND		0.051	mg/Kg-dry	1	1/29/2018 11:55 PM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	1/29/2018 11:55 PM
Surr: 1,2-Dichloroethane-d4	*106*		*70-130*	*%REC*	1	1/29/2018 11:55 PM
Surr: 4-Bromofluorobenzene	*92.2*		*70-130*	*%REC*	1	1/29/2018 11:55 PM
Surr: Dibromofluoromethane	*101*		*70-130*	*%REC*	1	1/29/2018 11:55 PM
Surr: Toluene-d8	*98.7*		*70-130*	*%REC*	1	1/29/2018 11:55 PM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 1/29/18 17:45		Analyst: **STP**
Chloride	**48**		**13**	**mg/Kg-dry**	1	1/30/2018 06:30 PM
MOISTURE			**SW3550C**			Analyst: **NW**
Moisture	**26**		**0.050**	**% of sample**	1	1/31/2018 07:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 02-Feb-18

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **113563** Instrument ID **GC8** Method: **SW8015C**

MBLK Sample ID: **DBLKS1-113563-113563** Units: **mg/Kg** Analysis Date: **1/30/2018 03:18 PM**
Client ID: Run ID: **GC8_180130A** SeqNo: **4870238** Prep Date: **1/30/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
ORO (C28-C40)	ND	5.0								
Surr: 4-Terphenyl-d14	*2.582*	0	*3.328*	0	*77.6*	*34-130*	0			

LCS Sample ID: **DLCSS1-113563-113563** Units: **mg/Kg** Analysis Date: **1/30/2018 03:47 PM**
Client ID: Run ID: **GC8_180130A** SeqNo: **4870240** Prep Date: **1/30/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	297.8	5.0	330.6	0	90.1	65-122	0			
ORO (C28-C40)	304.7	5.0	330.6	0	92.1	81-116	0			
Surr: 4-Terphenyl-d14	*2.482*	0	*3.306*	0	*75.1*	*34-130*	0			

MS Sample ID: **18011336-02A MS** Units: **mg/Kg** Analysis Date: **1/30/2018 04:45 PM**
Client ID: Run ID: **GC8_180130A** SeqNo: **4870254** Prep Date: **1/30/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	224.6	4.9	329	0	68.3	65-122	0			
ORO (C28-C40)	219.9	4.9	329	0	66.8	81-116	0			S
Surr: 4-Terphenyl-d14	*1.96*	0	*3.29*	0	*59.6*	*34-130*	0			

MSD Sample ID: **18011336-02A MSD** Units: **mg/Kg** Analysis Date: **1/30/2018 05:14 PM**
Client ID: Run ID: **GC8_180130A** SeqNo: **4870256** Prep Date: **1/30/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	218.2	5.0	332	0	65.7	65-122	224.6	2.91	30	
ORO (C28-C40)	196.9	5.0	332	0	59.3	81-116	219.9	11	30	S
Surr: 4-Terphenyl-d14	*1.678*	0	*3.32*	0	*50.6*	*34-130*	1.96	*15.5*	*30*	

The following samples were analyzed in this batch:

18011341-01A	18011341-02A	18011341-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **113626** Instrument ID **GC8** Method: **SW8015C**

MBLK Sample ID: **DBLKS1-113626-113626** Units: **mg/Kg** Analysis Date: **1/31/2018 06:26 PM**
Client ID: Run ID: **GC8_180131A** SeqNo: **4873503** Prep Date: **1/31/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
ORO (C28-C40)	ND	5.0								
Surr: 4-Terphenyl-d14	*2.467*	0	*3.33*	0	*74.1*	*34-130*	0			

LCS Sample ID: **DLCSS1-113626-113626** Units: **mg/Kg** Analysis Date: **1/31/2018 06:55 PM**
Client ID: Run ID: **GC8_180131A** SeqNo: **4873504** Prep Date: **1/31/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	300	5.0	333	0	90.1	65-122	0			
ORO (C28-C40)	283.6	5.0	333	0	85.2	81-116	0			
Surr: 4-Terphenyl-d14	*2.417*	0	*3.33*	0	*72.6*	*34-130*	0			

MS Sample ID: **18011341-13A MS** Units: **mg/Kg** Analysis Date: **1/31/2018 08:23 PM**
Client ID: **S5 (0-2 ft)** Run ID: **GC8_180131A** SeqNo: **4873506** Prep Date: **1/31/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	197.4	4.9	324.3	0	60.9	65-122	0			S
ORO (C28-C40)	172	4.9	324.3	1.539	52.5	81-116	0			S
Surr: 4-Terphenyl-d14	*1.688*	0	*3.243*	0	*52.1*	*34-130*	0			

MSD Sample ID: **18011341-13A MSD** Units: **mg/Kg** Analysis Date: **1/31/2018 08:52 PM**
Client ID: **S5 (0-2 ft)** Run ID: **GC8_180131A** SeqNo: **4873507** Prep Date: **1/31/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	197	4.9	329.2	0	59.8	65-122	197.4	0.204	30	S
ORO (C28-C40)	205.2	4.9	329.2	1.539	61.9	81-116	172	17.7	30	S
Surr: 4-Terphenyl-d14	*1.714*	0	*3.292*	0	*52.1*	*34-130*	1.688	*1.5*	*30*	

The following samples were analyzed in this batch:

18011341-04A	18011341-05A	18011341-06A
18011341-07A	18011341-08A	18011341-09A
18011341-10A	18011341-11A	18011341-12A
18011341-13A	18011341-14A	18011341-15A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **113516** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **MBLK-113516-113516** Units: **µg/Kg-dry** Analysis Date: **1/29/2018 07:45 PM**
Client ID: Run ID: **GC9_180129A** SeqNo: **4870430** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	5,000								
Surr: Toluene-d8	*5205*	0	*5000*	0	*104*	*71-123*	0			

LCS Sample ID: **LCS-113516-113516** Units: **µg/Kg-dry** Analysis Date: **1/29/2018 06:17 PM**
Client ID: Run ID: **GC9_180129A** SeqNo: **4870428** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	516500	5,000	500000	0	103	71-123	0			
Surr: Toluene-d8	*4512*	0	*5000*	0	*90.2*	*71-123*	0			

MS Sample ID: **18011336-01A MS** Units: **µg/Kg-dry** Analysis Date: **1/30/2018 09:24 PM**
Client ID: Run ID: **GC9_180130A** SeqNo: **4871482** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	921200	5,900	585800	0	157	71-123	0			S
Surr: Toluene-d8	*5546*	0	*5858*	0	*94.7*	*71-123*	0			

MSD Sample ID: **18011336-01A MSD** Units: **µg/Kg-dry** Analysis Date: **1/30/2018 09:53 PM**
Client ID: Run ID: **GC9_180130A** SeqNo: **4871483** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	698800	5,900	585800	0	119	71-123	921200	27.5	30	
Surr: Toluene-d8	*5391*	0	*5858*	0	*92*	*71-123*	5546	*2.82*	*30*	

The following samples were analyzed in this batch:

18011341-01A	18011341-02A	18011341-03A
18011341-04A	18011341-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **113527** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **MBLK-113527-113527** Units: **µg/Kg-dry** Analysis Date: **1/29/2018 08:15 PM**
Client ID: Run ID: **GC9_180129A** SeqNo: **4870431** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	5,000								
Surr: Toluene-d8	*5022*	0	*5000*	0	*100*	*71-123*	0			

LCS Sample ID: **LCS-113527-113527** Units: **µg/Kg-dry** Analysis Date: **1/29/2018 06:46 PM**
Client ID: Run ID: **GC9_180129A** SeqNo: **4870429** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	484900	5,000	500000	0	97	71-123	0			
Surr: Toluene-d8	*4458*	0	*5000*	0	*89.2*	*71-123*	0			

MS Sample ID: **18011339-01A MS** Units: **µg/Kg-dry** Analysis Date: **1/30/2018 10:23 PM**
Client ID: Run ID: **GC9_180130A** SeqNo: **4871484** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	649000	6,200	623600	0	104	71-123	0			
Surr: Toluene-d8	*5676*	0	*6236*	0	*91*	*71-123*	0			

MSD Sample ID: **18011339-01A MSD** Units: **µg/Kg-dry** Analysis Date: **1/30/2018 10:52 PM**
Client ID: Run ID: **GC9_180130A** SeqNo: **4871485** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	652800	6,200	623600	0	105	71-123	649000	0.58	30	
Surr: Toluene-d8	*5941*	0	*6236*	0	*95.3*	*71-123*	5676	*4.56*	*30*	

The following samples were analyzed in this batch:

18011341-06A	18011341-07A	18011341-08A
18011341-09A	18011341-10A	18011341-11A
18011341-12A	18011341-13A	18011341-14A
18011341-15A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **113514** Instrument ID **VMS8** Method: **SW8260B**

MBLK Sample ID: **MBLK-113514-113514** Units: **µg/Kg-dry** Analysis Date: **1/29/2018 08:00 PM**
Client ID: Run ID: **VMS8_180129B** SeqNo: **4868373** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	*955.5*	0	*1000*	0	*95.6*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*968*	0	*1000*	0	*96.8*	*70-130*	0			
Surr: Dibromofluoromethane	*974*	0	*1000*	0	*97.4*	*70-130*	0			
Surr: Toluene-d8	*962*	0	*1000*	0	*96.2*	*70-130*	0			

LCS Sample ID: **LCS-113514-113514** Units: **µg/Kg-dry** Analysis Date: **1/29/2018 07:14 PM**
Client ID: Run ID: **VMS8_180129B** SeqNo: **4868372** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1102	30	1000	0	110	75-125	0			
Ethylbenzene	1101	30	1000	0	110	75-125	0			
m,p-Xylene	2225	60	2000	0	111	80-125	0			
o-Xylene	1078	30	1000	0	108	75-125	0			
Toluene	1098	30	1000	0	110	70-125	0			
Xylenes, Total	3304	90	3000	0	110	75-125	0			
Surr: 1,2-Dichloroethane-d4	*973*	0	*1000*	0	*97.3*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*986*	0	*1000*	0	*98.6*	*70-130*	0			
Surr: Dibromofluoromethane	*1010*	0	*1000*	0	*101*	*70-130*	0			
Surr: Toluene-d8	*965*	0	*1000*	0	*96.5*	*70-130*	0			

MS Sample ID: **18011336-01A MS** Units: **µg/Kg-dry** Analysis Date: **1/30/2018 05:28 PM**
Client ID: Run ID: **VMS8_180130A** SeqNo: **4869515** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1343	35	1172	0	115	75-125	0			
Ethylbenzene	1317	35	1172	0	112	75-125	0			
m,p-Xylene	2648	70	2343	0	113	80-125	0			
o-Xylene	1306	35	1172	0	111	75-125	0			
Toluene	1282	35	1172	0	109	70-125	0			
Xylenes, Total	3953	110	3515	0	112	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1223*	0	*1172*	0	*104*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1209*	0	*1172*	0	*103*	*70-130*	0			
Surr: Dibromofluoromethane	*1140*	0	*1172*	0	*97.3*	*70-130*	0			
Surr: Toluene-d8	*1141*	0	*1172*	0	*97.4*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **113514** Instrument ID **VMS8** Method: **SW8260B**

MSD Sample ID: **18011336-01A MSD** Units: **µg/Kg-dry** Analysis Date: **1/30/2018 05:44 PM**
Client ID: Run ID: **VMS8_180130A** SeqNo: **4869516** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1346	35	1172	0	115	75-125	1343	0.218	30	
Ethylbenzene	1313	35	1172	0	112	75-125	1317	0.356	30	
m,p-Xylene	2670	70	2343	0	114	80-125	2648	0.837	30	
o-Xylene	1300	35	1172	0	111	75-125	1306	0.405	30	
Toluene	1300	35	1172	0	111	70-125	1282	1.41	30	
Xylenes, Total	3970	110	3515	0	113	75-125	3953	0.429	30	
Surr: 1,2-Dichloroethane-d4	*1212*	0	*1172*	0	*103*	*70-130*	1223	*0.866*	*30*	
Surr: 4-Bromofluorobenzene	*1211*	0	*1172*	0	*103*	*70-130*	1209	*0.194*	*30*	
Surr: Dibromofluoromethane	*1139*	0	*1172*	0	*97.2*	*70-130*	1140	*0.103*	*30*	
Surr: Toluene-d8	*1162*	0	*1172*	0	*99.2*	*70-130*	1141	*1.88*	*30*	

The following samples were analyzed in this batch:

18011341-01A	18011341-02A	18011341-03A
18011341-04A	18011341-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **113515** Instrument ID **VMS10** Method: **SW8260B**

MBLK Sample ID: **MBLK-113515-113515** Units: **µg/Kg-dry** Analysis Date: **1/29/2018 09:20 PM**
Client ID: Run ID: **VMS10_180129B** SeqNo: **4868618** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	*1036*	0	*1000*	0	*104*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*944*	0	*1000*	0	*94.4*	*70-130*	0			
Surr: Dibromofluoromethane	*1006*	0	*1000*	0	*101*	*70-130*	0			
Surr: Toluene-d8	*975*	0	*1000*	0	*97.5*	*70-130*	0			

LCS Sample ID: **LCS-113515-113515** Units: **µg/Kg-dry** Analysis Date: **1/29/2018 08:33 PM**
Client ID: Run ID: **VMS10_180129B** SeqNo: **4868617** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1072	30	1000	0	107	75-125	0			
Ethylbenzene	959	30	1000	0	95.9	75-125	0			
m,p-Xylene	1914	60	2000	0	95.7	80-125	0			
o-Xylene	958.5	30	1000	0	95.8	75-125	0			
Toluene	1058	30	1000	0	106	70-125	0			
Xylenes, Total	2872	90	3000	0	95.7	75-125	0			
Surr: 1,2-Dichloroethane-d4	*963.5*	0	*1000*	0	*96.4*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1024*	0	*1000*	0	*102*	*70-130*	0			
Surr: Dibromofluoromethane	*1002*	0	*1000*	0	*100*	*70-130*	0			
Surr: Toluene-d8	*999.5*	0	*1000*	0	*100*	*70-130*	0			

MS Sample ID: **18011339-01A MS** Units: **µg/Kg-dry** Analysis Date: **1/30/2018 02:31 AM**
Client ID: Run ID: **VMS10_180129B** SeqNo: **4868634** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1298	37	1247	0	104	75-125	0			
Ethylbenzene	1156	37	1247	0	92.6	75-125	0			
m,p-Xylene	2363	75	2494	0	94.7	80-125	0			
o-Xylene	1192	37	1247	0	95.6	75-125	0			
Toluene	1245	37	1247	0	99.8	70-125	0			
Xylenes, Total	3555	110	3742	0	95	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1202*	0	*1247*	0	*96.4*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1333*	0	*1247*	0	*107*	*70-130*	0			
Surr: Dibromofluoromethane	*1166*	0	*1247*	0	*93.4*	*70-130*	0			
Surr: Toluene-d8	*1224*	0	*1247*	0	*98.2*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **113515** Instrument ID **VMS10** Method: **SW8260B**

MSD Sample ID: **18011339-01A MSD** Units: **µg/Kg-dry** Analysis Date: **1/30/2018 02:47 AM**
Client ID: Run ID: **VMS10_180129B** SeqNo: **4868635** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1252	37	1247	0	100	75-125	1298	3.67	30	
Ethylbenzene	1175	37	1247	0	94.2	75-125	1156	1.71	30	
m,p-Xylene	2376	75	2494	0	95.2	80-125	2363	0.553	30	
o-Xylene	1207	37	1247	0	96.8	75-125	1192	1.2	30	
Toluene	1270	37	1247	0	102	70-125	1245	2.03	30	
Xylenes, Total	3583	110	3742	0	95.8	75-125	3555	0.769	30	
Surr: 1,2-Dichloroethane-d4	*1171*	0	*1247*	0	*93.9*	*70-130*	1202	*2.58*	*30*	
Surr: 4-Bromofluorobenzene	*1359*	0	*1247*	0	*109*	*70-130*	1333	*1.95*	*30*	
Surr: Dibromofluoromethane	*1200*	0	*1247*	0	*96.2*	*70-130*	1166	*2.95*	*30*	
Surr: Toluene-d8	*1291*	0	*1247*	0	*104*	*70-130*	1224	*5.31*	*30*	

The following samples were analyzed in this batch:

18011341-06A	18011341-07A	18011341-08A
18011341-09A	18011341-10A	18011341-11A
18011341-12A	18011341-13A	18011341-14A
18011341-15A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **113545** Instrument ID **GALLERY** Method: **A4500-Cl E-11**

MBLK Sample ID: **MBLK-113545-113545** Units: **mg/Kg** Analysis Date: **1/30/2018 06:30 PM**
Client ID: Run ID: **GALLERY_180130F** SeqNo: **4869690** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	10								

MS Sample ID: **18011339-04AMS** Units: **mg/Kg** Analysis Date: **1/30/2018 06:30 PM**
Client ID: Run ID: **GALLERY_180130F** SeqNo: **4869692** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	591.4	10	500	46.79	109	75-125	0			

MSD Sample ID: **18011339-04AMSD** Units: **mg/Kg** Analysis Date: **1/30/2018 06:30 PM**
Client ID: Run ID: **GALLERY_180130F** SeqNo: **4869693** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	604.7	10	500	46.79	112	75-125	591.4	2.22	25	

LCS1 Sample ID: **LCS1-113545-113545** Units: **mg/Kg** Analysis Date: **1/30/2018 06:30 PM**
Client ID: Run ID: **GALLERY_180130F** SeqNo: **4869713** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	96.95	10	100	0	96.9	80-120	0			

LCS2 Sample ID: **LCS2-113545-113545** Units: **mg/Kg** Analysis Date: **1/30/2018 06:30 PM**
Client ID: Run ID: **GALLERY_180130F** SeqNo: **4869714** Prep Date: **1/29/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	531.6	10	500	0	106	80-120	0			

The following samples were analyzed in this batch:

18011341-01A	18011341-02A	18011341-03A
18011341-04A	18011341-05A	18011341-06A
18011341-07A	18011341-08A	18011341-09A
18011341-10A	18011341-11A	18011341-12A
18011341-13A	18011341-14A	18011341-15A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18011341
Project: RDX 15-11

QC BATCH REPORT

Batch ID: **R229228** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R229228** Units: **% of sample** Analysis Date: **1/31/2018 07:15 PM**
Client ID: Run ID: **MOIST_180131F** SeqNo: **4873594** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R229228** Units: **% of sample** Analysis Date: **1/31/2018 07:15 PM**
Client ID: Run ID: **MOIST_180131F** SeqNo: **4873593** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **18011341-01A DUP** Units: **% of sample** Analysis Date: **1/31/2018 07:15 PM**
Client ID: **S1 (0-2 ft)** Run ID: **MOIST_180131F** SeqNo: **4873576** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	26.33	0.050	0	0	0	0-0	29.39	11	10	R

DUP Sample ID: **18011341-07A DUP** Units: **% of sample** Analysis Date: **1/31/2018 07:15 PM**
Client ID: **S3 (0-2 ft)** Run ID: **MOIST_180131F** SeqNo: **4873583** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	23.77	0.050	0	0	0	0-0	25.23	5.96	10	

The following samples were analyzed in this batch:

18011341-01A	18011341-02A	18011341-03A
18011341-04A	18011341-05A	18011341-06A
18011341-07A	18011341-08A	18011341-09A
18011341-10A	18011341-11A	18011341-12A
18011341-13A	18011341-14A	18011341-15A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER # 18011341

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	RDX 15-11	SAMPLER		DATE	23/01/2018
PROJECT No.	17E--00043	SITE ID	RDX 15-11	TURNAROUND	5 days
		EDD FORMAT			
		PURCHASE ORDER			
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy		
SEND REPORT TO	Raley	INVOICE ATTN TO	Jim Raley		
ADDRESS		ADDRESS	5315 Buena Vista Dr		
CITY / STATE / ZIP		CITY / STATE / ZIP	Carlsbad, NM 88220		
PHONE		PHONE	970 589 0743		
FAX		FAX			
E-MAIL	Karolina.blaney@wpxenergy.com; james.raley@wpxenergy.com	E-MAIL	Karolina.blaney@wpxenergy.com; James.Raley@wpxenergy.com		

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO + GRO + ORO	BTEX	Chloride		Hold														
1	S1 (0-2 ft)	S	23/01/2018		2			x	x	x																
2	S1 (2-4 ft)	S	23/01/2018		2			x	x	x																
3	S1 (4-6 ft)	S	23/01/2018		2			x	x	x																
4	S2 (0-2 ft)	S	23/01/2018		2			x	x	x																
5	S2 (2-4 ft)	S	23/01/2018		2			x	x	x																
6	S2 (4-6 ft)	S	23/01/2018		2			x	x	x																
7	S3 (0-2 ft)	S	23/01/2018		2			x	x	x																
8	S3 (2-4 ft)	S	23/01/2018		2			x	x	x																
9	S3 (4-6 ft)	S	23/01/2018		2			x	x	x																

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: SRL 5.7°C

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	24/01/2018	15:00
RECEIVED BY		Kevin Wiegenick	1/25/18	0930
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Laboratory Group
HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER # 18011341

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	RDX 15-11	SAMPLER	
PROJECT No.	17E--00043	SITE ID	RDX 15-11
		EDD FORMAT	
COMPANY NAME	WPX Energy	PURCHASE ORDER	
SEND REPORT TO	Raley	BILL TO COMPANY	WPX Energy
ADDRESS		INVOICE ATTN TO	Jim Raley
CITY / STATE / ZIP		ADDRESS	5315 Buena Vista Dr
PHONE		CITY / STATE / ZIP	Carlsbad, NM 88220
FAX		PHONE	970 589 0743
E-MAIL	Karolina.blaney@wpxenergy.com; james.raley@wpxenergy.com	FAX	
		E-MAIL	Karolina.blaney@wpxenergy.com; James.Raley@wpxenergy.com

DATE 23/01/2018

TURNAROUND 5 days

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO + GRO + ORO	BTEX	Chloride	Hold
10	S4 (0-2 ft)	S	23/01/2018		2			x	x	x	
11	S4 (2-4 ft)	S	23/01/2018		2			x	x	x	
12	S4 (4-6 ft)	S	23/01/2018		2			x	x	x	
13	S5 (0-2 ft)	S	23/01/2018		2			x	x	x	
14	S5 (2-4 ft)	S	23/01/2018		2			x	x	x	
15	S5 (4-6 ft)	S	23/01/2018		2			x	x	x	

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	24/01/2018	15:00
RECEIVED BY		KEITH WICHENGA	1/26/18	0930
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Group, USA

Sample Receipt Checklist

Client Name: **WPX - NM** Date/Time Received: **26-Jan-18 09:30**

Work Order: **18011341** Received by: **KRW**

Checklist completed by Keith Wierenga eSignature 26-Jan-18 Date Reviewed by: Chad Whelton eSignature 26-Jan-18 Date

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	5.2/5.2 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	1/26/2018 2:28:12 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

Analytical Report 605809

for

LT Environmental, Inc.

Project Manager: Adrian Baker

RDX 15-11

27-NOV-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

27-NOV-18

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

Reference: XENCO Report No(s): **605809**
RDX 15-11
Project Address: EDDY NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 605809. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 605809 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

Sample Cross Reference 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	11-14-18 16:00	6 In	605809-001
SS01	S	11-14-18 16:05	1 ft	605809-002
SS02	S	11-14-18 16:10	6 In	605809-003
SS02	S	11-14-18 16:15	1 ft	605809-004
SS03	S	11-14-18 16:20	6 In	605809-005
SS03	S	11-14-18 16:25	1 ft	605809-006
SS04	S	11-14-18 16:30	6 In	605809-007
SS04	S	11-14-18 16:40	1 ft	605809-008
SS05	S	11-14-18 16:55	6 In	605809-009
SS05	S	11-14-18 17:00	1 ft	605809-010

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: RDX 15-11

Project ID:
Work Order Number(s): *605809*

Report Date: *27-NOV-18*
Date Received: *11/16/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3070611 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3070616 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 605809

LT Environmental, Inc., Arvada, CO

Project Name: RDX 15-11

Project Id:
Contact: Adrian Baker
Project Location: EDDY NM

Date Received in Lab: Fri Nov-16-18 12:30 pm
Report Date: 27-NOV-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	605809-001		605809-002		605809-003		605809-004		605809-005		605809-006	
	Field Id:	SS01		SS01		SS02		SS02		SS03		SS03	
	Depth:	6- In		1- ft		6- In		1- ft		6- In		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-14-18 16:00		Nov-14-18 16:05		Nov-14-18 16:10		Nov-14-18 16:15		Nov-14-18 16:20		Nov-14-18 16:25	
BTEX by EPA 8021B SUB: T104704219-18-18	*Extracted:*	Nov-20-18 10:00		Nov-20-18 10:00		Nov-20-18 10:00		Nov-20-18 10:00		Nov-20-18 10:00		Nov-20-18 10:00	
	Analyzed:	Nov-21-18 20:42		Nov-21-18 21:05		Nov-22-18 00:39		Nov-22-18 02:13		Nov-22-18 02:37		Nov-22-18 03:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.0192	0.0192	<0.0197	0.0197	<0.0192	0.0192	<0.0189	0.0189	<0.0198	0.0198	<0.0178	0.0178
Toluene		<0.0192	0.0192	<0.0197	0.0197	<0.0192	0.0192	<0.0189	0.0189	<0.0198	0.0198	<0.0178	0.0178
Ethylbenzene		<0.0192	0.0192	<0.0197	0.0197	<0.0192	0.0192	<0.0189	0.0189	<0.0198	0.0198	<0.0178	0.0178
m,p-Xylenes		<0.0385	0.0385	<0.0394	0.0394	<0.0385	0.0385	<0.0377	0.0377	<0.0396	0.0396	<0.0357	0.0357
o-Xylene		<0.0192	0.0192	<0.0197	0.0197	<0.0192	0.0192	<0.0189	0.0189	<0.0198	0.0198	<0.0178	0.0178
Total Xylenes		<0.0192	0.0192	<0.0197	0.0197	<0.0192	0.0192	<0.0189	0.0189	<0.0198	0.0198	<0.0178	0.0178
Total BTEX		<0.0192	0.0192	<0.0197	0.0197	<0.0192	0.0192	<0.0189	0.0189	<0.0198	0.0198	<0.0178	0.0178
Inorganic Anions by EPA 300 SUB: T104704219-18-18	*Extracted:*	Nov-19-18 17:30		Nov-19-18 17:30		Nov-19-18 17:30		Nov-19-18 17:30		Nov-19-18 17:30		Nov-19-18 17:30	
	Analyzed:	Nov-20-18 07:12		Nov-20-18 07:18		Nov-20-18 07:25		Nov-20-18 07:31		Nov-20-18 07:49		Nov-20-18 07:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.97	4.97	<5.00	5.00	<4.99	4.99	<4.99	4.99	287	4.99	549	4.96
TPH by SW8015 Mod	*Extracted:*	Nov-16-18 16:00		Nov-16-18 16:00		Nov-16-18 16:00		Nov-16-18 16:00		Nov-16-18 16:00		Nov-16-18 16:00	
	Analyzed:	Nov-17-18 23:22		Nov-18-18 00:17		Nov-18-18 00:35		Nov-18-18 00:53		Nov-18-18 01:11		Nov-18-18 01:29	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analysis Summary 605809

LT Environmental, Inc., Arvada, CO

Project Name: RDX 15-11

Project Id:
Contact: Adrian Baker
Project Location: EDDY NM

Date Received in Lab: Fri Nov-16-18 12:30 pm
Report Date: 27-NOV-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	605809-007		605809-008		605809-009		605809-010					
	Field Id:	SS04		SS04		SS05		SS05					
	Depth:	6- In		1- ft		6- In		1- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Nov-14-18 16:30		Nov-14-18 16:40		Nov-14-18 16:55		Nov-14-18 17:00					
BTEX by EPA 8021B SUB: T104704219-18-18	*Extracted:*	Nov-20-18 10:00		Nov-20-18 10:00		Nov-20-18 10:00		Nov-20-18 10:00					
	Analyzed:	Nov-22-18 03:24		Nov-22-18 03:47		Nov-22-18 04:11		Nov-22-18 04:35					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.0193	0.0193	<0.0196	0.0196	<0.0197	0.0197	<0.0193	0.0193				
Toluene		<0.0193	0.0193	<0.0196	0.0196	<0.0197	0.0197	<0.0193	0.0193				
Ethylbenzene		<0.0193	0.0193	<0.0196	0.0196	<0.0197	0.0197	<0.0193	0.0193				
m,p-Xylenes		<0.0386	0.0386	<0.0392	0.0392	<0.0394	0.0394	<0.0385	0.0385				
o-Xylene		<0.0193	0.0193	<0.0196	0.0196	<0.0197	0.0197	<0.0193	0.0193				
Total Xylenes		<0.0193	0.0193	<0.0196	0.0196	<0.0197	0.0197	<0.0193	0.0193				
Total BTEX		<0.0193	0.0193	<0.0196	0.0196	<0.0197	0.0197	<0.0193	0.0193				
Inorganic Anions by EPA 300 SUB: T104704219-18-18	*Extracted:*	Nov-19-18 17:30		Nov-19-18 17:30		Nov-19-18 17:30		Nov-19-18 17:30					
	Analyzed:	Nov-20-18 08:14		Nov-20-18 08:20		Nov-20-18 08:26		Nov-20-18 08:33					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		60.7	4.98	78.8	4.98	50.7	5.00	223	5.00				
TPH by SW8015 Mod	*Extracted:*	Nov-16-18 16:00		Nov-16-18 16:00		Nov-16-18 16:00		Nov-16-18 16:00					
	Analyzed:	Nov-18-18 01:47		Nov-18-18 02:05		Nov-18-18 02:23		Nov-18-18 02:41					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		88.6	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total TPH		88.6	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id: **SS01** Matrix: Soil Date Received:11.16.18 12.30

Lab Sample Id: 605809-001 Date Collected: 11.14.18 16.00 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 11.19.18 17.30 Basis: Wet Weight

Seq Number: 3070276 SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	11.20.18 07.12	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 11.16.18 16.00 Basis: Wet Weight

Seq Number: 3070133

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.17.18 23.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.17.18 23.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.17.18 23.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.17.18 23.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.17.18 23.22	
o-Terphenyl	84-15-1	95	%	70-135	11.17.18 23.22	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-001	Date Collected:	11.14.18 16.00	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070611			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0192	0.0192	mg/kg	11.21.18 20.42	U	1
Toluene	108-88-3	<0.0192	0.0192	mg/kg	11.21.18 20.42	U	1
Ethylbenzene	100-41-4	<0.0192	0.0192	mg/kg	11.21.18 20.42	U	1
m,p-Xylenes	179601-23-1	<0.0385	0.0385	mg/kg	11.21.18 20.42	U	1
o-Xylene	95-47-6	<0.0192	0.0192	mg/kg	11.21.18 20.42	U	1
Total Xylenes	1330-20-7	<0.0192	0.0192	mg/kg	11.21.18 20.42	U	1
Total BTEX		<0.0192	0.0192	mg/kg	11.21.18 20.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	68-120	11.21.18 20.42	
a,a,a-Trifluorotoluene	98-08-8	120	%	71-121	11.21.18 20.42	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-002	Date Collected:	11.14.18 16.05	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.19.18 17.30	Basis:	Wet Weight
Seq Number:	3070276			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	11.20.18 07.18	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.18.18 00.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.18.18 00.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.18.18 00.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.18.18 00.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	11.18.18 00.17	
o-Terphenyl	84-15-1	98	%	70-135	11.18.18 00.17	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-002	Date Collected:	11.14.18 16.05	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070611			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0197	0.0197	mg/kg	11.21.18 21.05	U	1
Toluene	108-88-3	<0.0197	0.0197	mg/kg	11.21.18 21.05	U	1
Ethylbenzene	100-41-4	<0.0197	0.0197	mg/kg	11.21.18 21.05	U	1
m,p-Xylenes	179601-23-1	<0.0394	0.0394	mg/kg	11.21.18 21.05	U	1
o-Xylene	95-47-6	<0.0197	0.0197	mg/kg	11.21.18 21.05	U	1
Total Xylenes	1330-20-7	<0.0197	0.0197	mg/kg	11.21.18 21.05	U	1
Total BTEX		<0.0197	0.0197	mg/kg	11.21.18 21.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	68-120	11.21.18 21.05	
a,a,a-Trifluorotoluene	98-08-8	96	%	71-121	11.21.18 21.05	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id: **SS02** Matrix: Soil Date Received:11.16.18 12.30

Lab Sample Id: 605809-003 Date Collected: 11.14.18 16.10 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 11.19.18 17.30 Basis: Wet Weight

Seq Number: 3070276 SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	11.20.18 07.25	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 11.16.18 16.00 Basis: Wet Weight

Seq Number: 3070133

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.18.18 00.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.18.18 00.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.18.18 00.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.18.18 00.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.18.18 00.35	
o-Terphenyl	84-15-1	109	%	70-135	11.18.18 00.35	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-003	Date Collected:	11.14.18 16.10	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070616			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0192	0.0192	mg/kg	11.22.18 00.39	U	1
Toluene	108-88-3	<0.0192	0.0192	mg/kg	11.22.18 00.39	U	1
Ethylbenzene	100-41-4	<0.0192	0.0192	mg/kg	11.22.18 00.39	U	1
m,p-Xylenes	179601-23-1	<0.0385	0.0385	mg/kg	11.22.18 00.39	U	1
o-Xylene	95-47-6	<0.0192	0.0192	mg/kg	11.22.18 00.39	U	1
Total Xylenes	1330-20-7	<0.0192	0.0192	mg/kg	11.22.18 00.39	U	1
Total BTEX		<0.0192	0.0192	mg/kg	11.22.18 00.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	68-120	11.22.18 00.39	
a,a,a-Trifluorotoluene	98-08-8	95	%	71-121	11.22.18 00.39	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-004	Date Collected:	11.14.18 16.15	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.19.18 17.30	Basis:	Wet Weight
Seq Number:	3070276			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	11.20.18 07.31	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.18.18 00.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.18.18 00.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.18.18 00.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.18.18 00.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.18.18 00.53	
o-Terphenyl	84-15-1	114	%	70-135	11.18.18 00.53	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-004	Date Collected:	11.14.18 16.15	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070616			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0189	0.0189	mg/kg	11.22.18 02.13	U	1
Toluene	108-88-3	<0.0189	0.0189	mg/kg	11.22.18 02.13	U	1
Ethylbenzene	100-41-4	<0.0189	0.0189	mg/kg	11.22.18 02.13	U	1
m,p-Xylenes	179601-23-1	<0.0377	0.0377	mg/kg	11.22.18 02.13	U	1
o-Xylene	95-47-6	<0.0189	0.0189	mg/kg	11.22.18 02.13	U	1
Total Xylenes	1330-20-7	<0.0189	0.0189	mg/kg	11.22.18 02.13	U	1
Total BTEX		<0.0189	0.0189	mg/kg	11.22.18 02.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	68-120	11.22.18 02.13	
a,a,a-Trifluorotoluene	98-08-8	116	%	71-121	11.22.18 02.13	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id: **SS03** Matrix: Soil Date Received:11.16.18 12.30

Lab Sample Id: 605809-005 Date Collected: 11.14.18 16.20 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 11.19.18 17.30 Basis: Wet Weight

Seq Number: 3070276 SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**287**	4.99	mg/kg	11.20.18 07.49		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 11.16.18 16.00 Basis: Wet Weight

Seq Number: 3070133

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.18.18 01.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.18.18 01.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.18.18 01.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.18.18 01.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	11.18.18 01.11	
o-Terphenyl	84-15-1	95	%	70-135	11.18.18 01.11	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-005	Date Collected:	11.14.18 16.20	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070616			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0198	0.0198	mg/kg	11.22.18 02.37	U	1
Toluene	108-88-3	<0.0198	0.0198	mg/kg	11.22.18 02.37	U	1
Ethylbenzene	100-41-4	<0.0198	0.0198	mg/kg	11.22.18 02.37	U	1
m,p-Xylenes	179601-23-1	<0.0396	0.0396	mg/kg	11.22.18 02.37	U	1
o-Xylene	95-47-6	<0.0198	0.0198	mg/kg	11.22.18 02.37	U	1
Total Xylenes	1330-20-7	<0.0198	0.0198	mg/kg	11.22.18 02.37	U	1
Total BTEX		<0.0198	0.0198	mg/kg	11.22.18 02.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	68-120	11.22.18 02.37	
a,a,a-Trifluorotoluene	98-08-8	117	%	71-121	11.22.18 02.37	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-006	Date Collected:	11.14.18 16.25	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.19.18 17.30	Basis:	Wet Weight
Seq Number:	3070276			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**549**	4.96	mg/kg	11.20.18 07.56		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.18.18 01.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.18.18 01.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.18.18 01.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.18.18 01.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.18.18 01.29	
o-Terphenyl	84-15-1	99	%	70-135	11.18.18 01.29	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-006	Date Collected:	11.14.18 16.25	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070616			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0178	0.0178	mg/kg	11.22.18 03.00	U	1
Toluene	108-88-3	<0.0178	0.0178	mg/kg	11.22.18 03.00	U	1
Ethylbenzene	100-41-4	<0.0178	0.0178	mg/kg	11.22.18 03.00	U	1
m,p-Xylenes	179601-23-1	<0.0357	0.0357	mg/kg	11.22.18 03.00	U	1
o-Xylene	95-47-6	<0.0178	0.0178	mg/kg	11.22.18 03.00	U	1
Total Xylenes	1330-20-7	<0.0178	0.0178	mg/kg	11.22.18 03.00	U	1
Total BTEX		<0.0178	0.0178	mg/kg	11.22.18 03.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	68-120	11.22.18 03.00	
a,a,a-Trifluorotoluene	98-08-8	120	%	71-121	11.22.18 03.00	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-007	Date Collected:	11.14.18 16.30	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.19.18 17.30	Basis:	Wet Weight
Seq Number:	3070276			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**60.7**	4.98	mg/kg	11.20.18 08.14		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	11.18.18 01.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	**88.6**	14.9	mg/kg	11.18.18 01.47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	11.18.18 01.47	U	1
Total TPH	PHC635	**88.6**	14.9	mg/kg	11.18.18 01.47		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.18.18 01.47	
o-Terphenyl	84-15-1	97	%	70-135	11.18.18 01.47	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-007	Date Collected:	11.14.18 16.30	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070616			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0193	0.0193	mg/kg	11.22.18 03.24	U	1
Toluene	108-88-3	<0.0193	0.0193	mg/kg	11.22.18 03.24	U	1
Ethylbenzene	100-41-4	<0.0193	0.0193	mg/kg	11.22.18 03.24	U	1
m,p-Xylenes	179601-23-1	<0.0386	0.0386	mg/kg	11.22.18 03.24	U	1
o-Xylene	95-47-6	<0.0193	0.0193	mg/kg	11.22.18 03.24	U	1
Total Xylenes	1330-20-7	<0.0193	0.0193	mg/kg	11.22.18 03.24	U	1
Total BTEX		<0.0193	0.0193	mg/kg	11.22.18 03.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	68-120	11.22.18 03.24	
a,a,a-Trifluorotoluene	98-08-8	118	%	71-121	11.22.18 03.24	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-008	Date Collected:	11.14.18 16.40	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.19.18 17.30	Basis:	Wet Weight
Seq Number:	3070276			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**78.8**	4.98	mg/kg	11.20.18 08.20		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.18.18 02.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.18.18 02.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.18.18 02.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.18.18 02.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.18.18 02.05	
o-Terphenyl	84-15-1	96	%	70-135	11.18.18 02.05	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-008	Date Collected:	11.14.18 16.40	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070616			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0196	0.0196	mg/kg	11.22.18 03.47	U	1
Toluene	108-88-3	<0.0196	0.0196	mg/kg	11.22.18 03.47	U	1
Ethylbenzene	100-41-4	<0.0196	0.0196	mg/kg	11.22.18 03.47	U	1
m,p-Xylenes	179601-23-1	<0.0392	0.0392	mg/kg	11.22.18 03.47	U	1
o-Xylene	95-47-6	<0.0196	0.0196	mg/kg	11.22.18 03.47	U	1
Total Xylenes	1330-20-7	<0.0196	0.0196	mg/kg	11.22.18 03.47	U	1
Total BTEX		<0.0196	0.0196	mg/kg	11.22.18 03.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	68-120	11.22.18 03.47	
a,a,a-Trifluorotoluene	98-08-8	117	%	71-121	11.22.18 03.47	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id: **SS05** Matrix: Soil Date Received:11.16.18 12.30

Lab Sample Id: 605809-009 Date Collected: 11.14.18 16.55 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 11.19.18 17.30 Basis: Wet Weight

Seq Number: 3070276 SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**50.7**	5.00	mg/kg	11.20.18 08.26		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 11.16.18 16.00 Basis: Wet Weight

Seq Number: 3070133

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.18.18 02.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.18.18 02.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.18.18 02.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.18.18 02.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.18.18 02.23	
o-Terphenyl	84-15-1	92	%	70-135	11.18.18 02.23	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-009	Date Collected:	11.14.18 16.55	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070616			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0197	0.0197	mg/kg	11.22.18 04.11	U	1
Toluene	108-88-3	<0.0197	0.0197	mg/kg	11.22.18 04.11	U	1
Ethylbenzene	100-41-4	<0.0197	0.0197	mg/kg	11.22.18 04.11	U	1
m,p-Xylenes	179601-23-1	<0.0394	0.0394	mg/kg	11.22.18 04.11	U	1
o-Xylene	95-47-6	<0.0197	0.0197	mg/kg	11.22.18 04.11	U	1
Total Xylenes	1330-20-7	<0.0197	0.0197	mg/kg	11.22.18 04.11	U	1
Total BTEX		<0.0197	0.0197	mg/kg	11.22.18 04.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	68-120	11.22.18 04.11	
a,a,a-Trifluorotoluene	98-08-8	117	%	71-121	11.22.18 04.11	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-010	Date Collected:	11.14.18 17.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.19.18 17.30	Basis:	Wet Weight
Seq Number:	3070276			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**223**	5.00	mg/kg	11.20.18 08.33		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.18.18 02.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.18.18 02.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.18.18 02.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.18.18 02.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	11.18.18 02.41	
o-Terphenyl	84-15-1	96	%	70-135	11.18.18 02.41	

Certificate of Analytical Results 605809

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	11.16.18 12.30
Lab Sample Id:	605809-010	Date Collected:	11.14.18 17.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	11.20.18 10.00	Basis:	Wet Weight
Seq Number:	3070616			SUB:	T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0193	0.0193	mg/kg	11.22.18 04.35	U	1
Toluene	108-88-3	<0.0193	0.0193	mg/kg	11.22.18 04.35	U	1
Ethylbenzene	100-41-4	<0.0193	0.0193	mg/kg	11.22.18 04.35	U	1
m,p-Xylenes	179601-23-1	<0.0385	0.0385	mg/kg	11.22.18 04.35	U	1
o-Xylene	95-47-6	<0.0193	0.0193	mg/kg	11.22.18 04.35	U	1
Total Xylenes	1330-20-7	<0.0193	0.0193	mg/kg	11.22.18 04.35	U	1
Total BTEX		<0.0193	0.0193	mg/kg	11.22.18 04.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	68-120	11.22.18 04.35	
a,a,a-Trifluorotoluene	98-08-8	97	%	71-121	11.22.18 04.35	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 605809

LT Environmental, Inc.

RDX 15-11

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3070276 — Matrix: Solid — Date Prep: 11.19.18
MB Sample Id: 7666506-1-BLK — LCS Sample Id: 7666506-1-BKS — LCSD Sample Id: 7666506-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	268	107	275	110	90-110	3	20	mg/kg	11.20.18 05:52	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3070276 — Matrix: Soil — Date Prep: 11.19.18
Parent Sample Id: 605760-001 — MS Sample Id: 605760-001 S — MSD Sample Id: 605760-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	261	105	260	105	90-110	0	20	mg/kg	11.20.18 06:10	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3070276 — Matrix: Soil — Date Prep: 11.19.18
Parent Sample Id: 605809-004 — MS Sample Id: 605809-004 S — MSD Sample Id: 605809-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.37	250	267	106	264	105	90-110	1	20	mg/kg	11.20.18 07:37	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3070133 — Matrix: Solid — Date Prep: 11.16.18
MB Sample Id: 7666452-1-BLK — LCS Sample Id: 7666452-1-BKS — LCSD Sample Id: 7666452-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	960	96	966	97	70-135	1	20	mg/kg	11.17.18 19:26	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	1040	104	70-135	1	20	mg/kg	11.17.18 19:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		129		128		70-135	%	11.17.18 19:26
o-Terphenyl	108		103		106		70-135	%	11.17.18 19:26

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

QC Summary 605809

LT Environmental, Inc.

RDX 15-11

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3070133 | Matrix: Soil | Date Prep: 11.16.18
Parent Sample Id: 605669-001 | MS Sample Id: 605669-001 S | MSD Sample Id: 605669-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1110	111	1100	110	70-135	1	20	mg/kg	11.17.18 20:20	
Diesel Range Organics (DRO)	<8.13	1000	1130	113	1130	113	70-135	0	20	mg/kg	11.17.18 20:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		128		70-135	%	11.17.18 20:20
o-Terphenyl	117		113		70-135	%	11.17.18 20:20

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3070611 | Matrix: Solid | Date Prep: 11.20.18
MB Sample Id: 7666783-1-BLK | LCS Sample Id: 7666783-1-BKS | LCSD Sample Id: 7666783-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.99	100	2.00	100	55-120	1	20	mg/kg	11.21.18 09:01	
Toluene	<0.0200	2.00	1.97	99	2.00	100	77-120	2	20	mg/kg	11.21.18 09:01	
Ethylbenzene	<0.0200	2.00	2.05	103	2.13	107	77-120	4	20	mg/kg	11.21.18 09:01	
m,p-Xylenes	<0.0400	4.00	4.10	103	4.25	106	78-120	4	20	mg/kg	11.21.18 09:01	
o-Xylene	<0.0200	2.00	2.08	104	2.09	105	78-120	0	20	mg/kg	11.21.18 09:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	85		86		104		68-120	%	11.21.18 09:01
a,a,a-Trifluorotoluene	88		87		100		71-121	%	11.21.18 09:01

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3070616 | Matrix: Solid | Date Prep: 11.20.18
MB Sample Id: 7666784-1-BLK | LCS Sample Id: 7666784-1-BKS | LCSD Sample Id: 7666784-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	2.07	104	2.07	104	55-120	0	20	mg/kg	11.21.18 22:41	
Toluene	<0.0200	2.00	2.05	103	2.05	103	77-120	0	20	mg/kg	11.21.18 22:41	
Ethylbenzene	<0.0200	2.00	2.12	106	2.11	106	77-120	0	20	mg/kg	11.21.18 22:41	
m,p-Xylenes	<0.0400	4.00	4.19	105	4.24	106	78-120	1	20	mg/kg	11.21.18 22:41	
o-Xylene	<0.0200	2.00	2.16	108	2.11	106	78-120	2	20	mg/kg	11.21.18 22:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	91		113		90		68-120	%	11.21.18 22:41
a,a,a-Trifluorotoluene	94		113		89		71-121	%	11.21.18 22:41

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

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

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

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

Final 1.000

QC Summary 605809

LT Environmental, Inc.

RDX 15-11

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

Seq Number: 3070611 Matrix: Soil Date Prep: 11.20.18

Parent Sample Id: 605806-001 MS Sample Id: 605806-001 S MSD Sample Id: 605806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0191	1.91	1.84	96	1.86	97	54-120	1	25	mg/kg	11.21.18 11:25	
Toluene	<0.0191	1.91	1.85	97	1.88	98	57-120	2	25	mg/kg	11.21.18 11:25	
Ethylbenzene	<0.0191	1.91	1.90	99	1.96	102	58-131	3	25	mg/kg	11.21.18 11:25	
m,p-Xylenes	<0.0382	3.82	3.82	100	3.96	103	62-124	4	25	mg/kg	11.21.18 11:25	
o-Xylene	<0.0191	1.91	1.86	97	1.93	101	62-124	4	25	mg/kg	11.21.18 11:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	108		86		68-120	%	11.21.18 11:25
a,a,a-Trifluorotoluene	116		89		71-121	%	11.21.18 11:25

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

Seq Number: 3070616 Matrix: Soil Date Prep: 11.20.18

Parent Sample Id: 605809-003 MS Sample Id: 605809-003 S MSD Sample Id: 605809-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0196	1.96	1.83	93	1.78	93	54-120	3	25	mg/kg	11.22.18 01:03	
Toluene	<0.0196	1.96	1.88	96	1.82	95	57-120	3	25	mg/kg	11.22.18 01:03	
Ethylbenzene	<0.0196	1.96	1.92	98	1.88	98	58-131	2	25	mg/kg	11.22.18 01:03	
m,p-Xylenes	<0.0391	3.91	3.81	97	3.76	98	62-124	1	25	mg/kg	11.22.18 01:03	
o-Xylene	<0.0196	1.96	1.88	96	1.84	96	62-124	2	25	mg/kg	11.22.18 01:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	112		97		68-120	%	11.22.18 01:03
a,a,a-Trifluorotoluene	116		103		71-121	%	11.22.18 01:03

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

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

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

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

XENCO LABORATORIES

Setting the Standard since 1990

Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

CHAIN OF CUSTODY

Page 1 of 1

Xenco Quote #

Xenco Job # 605009

Client / Reporting Information

Company Name / Branch: LT Environmental, Inc. Permian Office

Company Address: 3300 N "A" St. Building 1 Unit 103 Midland, TX 79705

Email: abaker@ltenv.com

Phone No: (432) 704-5178

Project Contact: Adrian Baker

Samplers's Name

Project Information

Project Name/Number: RDX 15-11

Project Location: EDDY, NM 2RP-4032 & 4545

Invoice To: LT Environmental - Adrian Baker

PO Number: 03418014

Analytical Information

BTEX (only BTEX) 8021

TPH (DRO GRO MRO) 8015

Chloride (300.00)

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

No.	Field ID / Point of Collection	Sample Depth	Collection Date	Collection Time	Matrix	# of bottles	Number of preservatives: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	SS01	6"	11/14	16:00	S	1								X	
2	SS01	1'		16:05											
3	SS02	6"		16:10											
4	SS02	1'		16:15											
5	SS03	6"		16:20											
6	SS03	1'		16:25											
7	SS04	6"		16:30											
8	SS04	1'		16:40											
9	SS05	6"		16:55											
10	SS05	1'		17:00											

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking # 773740247056

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		11/14/2018	1	2	11.15.18	2
3	Relinquished by:	Date Time: 11/16 1230	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: X Cooler Temp. 2.1 2.0 Thermo. Corr. Factor

Notice: 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 loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Inter-Office Shipment

IOS Number **117553**

Date/Time: 11/19/18 10:15
Lab# From: **Midland**
Lab# To: **Lubbock**

Created by: Brianna Teel
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 1211 W. Florida Ave, Midland TX 79701
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
605809-001	S	SS01	11/14/18 16:00	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	
605809-001	S	SS01	11/14/18 16:00	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-002	S	SS01	11/14/18 16:05	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	
605809-002	S	SS01	11/14/18 16:05	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-003	S	SS02	11/14/18 16:10	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	
605809-003	S	SS02	11/14/18 16:10	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-004	S	SS02	11/14/18 16:15	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	
605809-004	S	SS02	11/14/18 16:15	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-005	S	SS03	11/14/18 16:20	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	
605809-005	S	SS03	11/14/18 16:20	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-006	S	SS03	11/14/18 16:25	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	
605809-006	S	SS03	11/14/18 16:25	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-007	S	SS04	11/14/18 16:30	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	
605809-007	S	SS04	11/14/18 16:30	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-008	S	SS04	11/14/18 16:40	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	
605809-008	S	SS04	11/14/18 16:40	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-009	S	SS05	11/14/18 16:55	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	
605809-009	S	SS05	11/14/18 16:55	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-010	S	SS05	11/14/18 17:00	SW8021B	BTEX by EPA 8021B	11/23/18	11/28/18	JKR	BR4FBZ BZ BZME EBZ X	
605809-010	S	SS05	11/14/18 17:00	E300	Inorganic Anions by EPA 300	11/23/18	12/12/18	JKR	CL	

Inter-Office Shipment

IOS Number **117553**

Date/Time: 11/19/18 10:15
Lab# From: **Midland**
Lab# To: **Lubbock**

Created by: Brianna Teel
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 1211 W. Florida Ave, Midland TX 79701
E-Mail: jessica.kramer@xenco.com

Inter Office Shipment or Sample Comments:

Relinquished By: Brianna Teel
Brianna Teel

Date Relinquished: 11/19/2018

Received By: _____

Date Received: _____

Cooler Temperature: _____

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/16/2018 12:30:00 PM

Work Order #: 605809

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 11/16/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 11/16/2018
Jessica Kramer

Analytical Report 613652

for

LT Environmental, Inc.

Project Manager: Adrian Baker

RDX 15-11

034818014

20-FEB-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

20-FEB-19

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

Reference: XENCO Report No(s): **613652**
RDX 15-11
Project Address:

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 613652. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 613652 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

Sample Cross Reference 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	02-04-19 09:05	1.5 - 3 ft	613652-001
FS02	S	02-04-19 09:45	0.5 - 1.5 ft	613652-002
SW01	S	02-04-19 10:00	0 - 3 ft	613652-003
SW02	S	02-04-19 10:10	0 - 1.5 ft	613652-004
FS03	S	02-04-19 10:35	1 ft	613652-005
FS05	S	02-04-19 11:20	2 ft	613652-006
FS04	S	02-04-19 12:00	2.5 ft	613652-007
SW04	S	02-04-19 12:25	0 - 2.5 ft	613652-008
SW03	S	02-04-19 12:30	0 - 2.5 ft	613652-009

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: RDX 15-11

Project ID: *034818014*
Work Order Number(s): *613652*

Report Date: *20-FEB-19*
Date Received: *02/06/2019*

Sample receipt non conformances and comments:

Corrected sample 009 name from SW05 to SW03 JK 02/20/19 JK NEW VERSION GENERATED

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078987 BTEX by EPA 8021B

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

Certificate of Analysis Summary 613652

LT Environmental, Inc., Arvada, CO

Project Name: RDX 15-11

Project Id: 034818014
Contact: Adrian Baker
Project Location:

Date Received in Lab: Wed Feb-06-19 12:00 pm
Report Date: 20-FEB-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	613652-001		613652-002		613652-003		613652-004		613652-005		613652-006	
	Field Id:	FS01		FS02		SW01		SW02		FS03		FS05	
	Depth:	1.5-3 ft		0.5-1.5 ft		0-3 ft		0-1.5 ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-04-19 09:05		Feb-04-19 09:45		Feb-04-19 10:00		Feb-04-19 10:10		Feb-04-19 10:35		Feb-04-19 11:20	
BTEX by EPA 8021B	***Extracted:***	Feb-12-19 15:00		Feb-12-19 15:00		Feb-12-19 15:00		Feb-12-19 15:00		Feb-12-19 15:00		Feb-12-19 15:00	
	Analyzed:	Feb-13-19 11:32		Feb-13-19 13:19		Feb-13-19 13:40		Feb-13-19 14:02		Feb-13-19 14:23		Feb-13-19 16:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
m,p-Xylenes		<0.00398	0.00398	<0.00401	0.00401	<0.00398	0.00398	<0.00402	0.00402	<0.00399	0.00399	<0.00402	0.00402
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Inorganic Anions by EPA 300	***Extracted:***	Feb-08-19 11:30		Feb-08-19 11:30		Feb-08-19 11:30		Feb-08-19 11:30		Feb-08-19 11:30		Feb-08-19 11:30	
	Analyzed:	Feb-08-19 14:41		Feb-08-19 14:47		Feb-08-19 15:12		Feb-08-19 15:18		Feb-08-19 15:39		Feb-08-19 15:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3130	24.9	6730	49.9	14300	99.8	7020	49.9	1180	24.8	1320	25.1
TPH by SW8015 Mod	***Extracted:***	Feb-09-19 14:00		Feb-09-19 14:00		Feb-09-19 14:00		Feb-09-19 14:00		Feb-09-19 14:00		Feb-09-19 14:00	
	Analyzed:	Feb-10-19 06:24		Feb-10-19 07:25		Feb-10-19 07:45		Feb-10-19 08:05		Feb-10-19 08:25		Feb-10-19 08:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		16.2	15.0	464	15.0	<15.0	15.0	84.9	15.0	161	15.0	178	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	96.8	15.0	<15.0	15.0	21.5	15.0	27.4	15.0	35.4	15.0
Total TPH		16.2	15.0	561	15.0	<15.0	15.0	106	15.0	188	15.0	213	15.0

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 613652

LT Environmental, Inc., Arvada, CO

Project Name: RDX 15-11

Project Id: 034818014
Contact: Adrian Baker
Project Location:

Date Received in Lab: Wed Feb-06-19 12:00 pm
Report Date: 20-FEB-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	613652-007		613652-008		613652-009					
	Field Id:	FS04		SW04		SW03					
	Depth:	2.5- ft		0-2.5 ft		0-2.5 ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Feb-04-19 12:00		Feb-04-19 12:25		Feb-04-19 12:30					
BTEX by EPA 8021B	***Extracted:***	Feb-12-19 15:00		Feb-12-19 15:00		Feb-12-19 15:00					
	Analyzed:	Feb-13-19 16:32		Feb-13-19 16:53		Feb-13-19 17:14					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
m,p-Xylenes		<0.00398	0.00398	<0.00400	0.00400	<0.00401	0.00401				
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Inorganic Anions by EPA 300	***Extracted:***	Feb-08-19 11:30		Feb-08-19 11:30		Feb-08-19 11:30					
	Analyzed:	Feb-08-19 16:03		Feb-08-19 16:09		Feb-08-19 16:15					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		8840	100	6090	49.6	9690	99.8				
TPH by SW8015 Mod	***Extracted:***	Feb-09-19 14:00		Feb-09-19 14:00		Feb-09-19 14:00					
	Analyzed:	Feb-10-19 12:29		Feb-10-19 09:26		Feb-10-19 09:46					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		105	14.9	180	15.0	353	15.0				
Motor Oil Range Hydrocarbons (MRO)		17.0	14.9	35.1	15.0	65.3	15.0				
Total TPH		122	14.9	215	15.0	418	15.0				

Version: 1.%

Jessica Kramer
Project Assistant

Final 1.001

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-001	Date Collected:	02.04.19 09.05	Sample Depth:	1.5 - 3 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 11.30	Basis:	Wet Weight
Seq Number:	3078636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3130**	24.9	mg/kg	02.08.19 14.41		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.09.19 14.00	Basis:	Wet Weight
Seq Number:	3078602				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 06.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	**16.2**	15.0	mg/kg	02.10.19 06.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.10.19 06.24	U	1
Total TPH	PHC635	**16.2**	15.0	mg/kg	02.10.19 06.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	02.10.19 06.24	
o-Terphenyl	84-15-1	89	%	70-135	02.10.19 06.24	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-001	Date Collected:	02.04.19 09.05	Sample Depth:	1.5 - 3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.13.19 11.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.13.19 11.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.13.19 11.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.13.19 11.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.13.19 11.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.13.19 11.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.13.19 11.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	80	%	70-130	02.13.19 11.32	
1,4-Difluorobenzene	540-36-3	87	%	70-130	02.13.19 11.32	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-002	Date Collected:	02.04.19 09.45	Sample Depth:	0.5 - 1.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 11.30	Basis:	Wet Weight
Seq Number:	3078636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6730**	49.9	mg/kg	02.08.19 14.47		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.09.19 14.00	Basis:	Wet Weight
Seq Number:	3078602				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 07.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	**464**	15.0	mg/kg	02.10.19 07.25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**96.8**	15.0	mg/kg	02.10.19 07.25		1
Total TPH	PHC635	**561**	15.0	mg/kg	02.10.19 07.25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	02.10.19 07.25	
o-Terphenyl	84-15-1	102	%	70-135	02.10.19 07.25	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-002	Date Collected:	02.04.19 09.45	Sample Depth:	0.5 - 1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.13.19 13.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.13.19 13.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.13.19 13.19	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.13.19 13.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.13.19 13.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.13.19 13.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.13.19 13.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	81	%	70-130	02.13.19 13.19	
1,4-Difluorobenzene	540-36-3	98	%	70-130	02.13.19 13.19	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-003	Date Collected:	02.04.19 10.00	Sample Depth:	0 - 3 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 11.30	Basis:	Wet Weight
Seq Number:	3078636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14300**	99.8	mg/kg	02.08.19 15.12		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.09.19 14.00	Basis:	Wet Weight
Seq Number:	3078602				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 07.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.10.19 07.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.10.19 07.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.10.19 07.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	02.10.19 07.45	
o-Terphenyl	84-15-1	91	%	70-135	02.10.19 07.45	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-003	Date Collected:	02.04.19 10.00	Sample Depth:	0 - 3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.13.19 13.40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.13.19 13.40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.13.19 13.40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.13.19 13.40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.13.19 13.40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.13.19 13.40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.13.19 13.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	87	%	70-130	02.13.19 13.40	
4-Bromofluorobenzene	460-00-4	72	%	70-130	02.13.19 13.40	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-004	Date Collected:	02.04.19 10.10	Sample Depth:	0 - 1.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 11.30	Basis:	Wet Weight
Seq Number:	3078636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7020**	49.9	mg/kg	02.08.19 15.18		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.09.19 14.00	Basis:	Wet Weight
Seq Number:	3078602				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 08.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	**84.9**	15.0	mg/kg	02.10.19 08.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**21.5**	15.0	mg/kg	02.10.19 08.05		1
Total TPH	PHC635	**106**	15.0	mg/kg	02.10.19 08.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	02.10.19 08.05	
o-Terphenyl	84-15-1	86	%	70-135	02.10.19 08.05	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-004	Date Collected:	02.04.19 10.10	Sample Depth:	0 - 1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.13.19 14.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.13.19 14.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.13.19 14.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.13.19 14.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.13.19 14.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.13.19 14.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.13.19 14.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	02.13.19 14.02	
4-Bromofluorobenzene	460-00-4	81	%	70-130	02.13.19 14.02	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id: **FS03** Matrix: Soil Date Received:02.06.19 12.00

Lab Sample Id: 613652-005 Date Collected: 02.04.19 10.35 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 02.08.19 11.30 Basis: Wet Weight

Seq Number: 3078636

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1180**	24.8	mg/kg	02.08.19 15.39		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 02.09.19 14.00 Basis: Wet Weight

Seq Number: 3078602

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 08.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	**161**	15.0	mg/kg	02.10.19 08.25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**27.4**	15.0	mg/kg	02.10.19 08.25		1
Total TPH	PHC635	**188**	15.0	mg/kg	02.10.19 08.25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	02.10.19 08.25	
o-Terphenyl	84-15-1	89	%	70-135	02.10.19 08.25	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-005	Date Collected:	02.04.19 10.35	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.13.19 14.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.13.19 14.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.13.19 14.23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.13.19 14.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.13.19 14.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.13.19 14.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.13.19 14.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87	%	70-130	02.13.19 14.23	
1,4-Difluorobenzene	540-36-3	96	%	70-130	02.13.19 14.23	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-006	Date Collected:	02.04.19 11.20	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 11.30	Basis:	Wet Weight
Seq Number:	3078636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1320**	25.1	mg/kg	02.08.19 15.46		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.09.19 14.00	Basis:	Wet Weight
Seq Number:	3078602				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 08.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	**178**	15.0	mg/kg	02.10.19 08.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**35.4**	15.0	mg/kg	02.10.19 08.46		1
Total TPH	PHC635	**213**	15.0	mg/kg	02.10.19 08.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.10.19 08.46	
o-Terphenyl	84-15-1	96	%	70-135	02.10.19 08.46	

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LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-006	Date Collected:	02.04.19 11.20	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.13.19 16.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.13.19 16.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.13.19 16.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.13.19 16.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.13.19 16.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.13.19 16.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.13.19 16.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	70-130	02.13.19 16.10	
4-Bromofluorobenzene	460-00-4	84	%	70-130	02.13.19 16.10	

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LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id: **FS04** Matrix: Soil Date Received:02.06.19 12.00

Lab Sample Id: 613652-007 Date Collected: 02.04.19 12.00 Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 02.08.19 11.30 Basis: Wet Weight

Seq Number: 3078636

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8840**	100	mg/kg	02.08.19 16.03		20

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 02.09.19 14.00 Basis: Wet Weight

Seq Number: 3078602

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.10.19 12.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	**105**	14.9	mg/kg	02.10.19 12.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**17.0**	14.9	mg/kg	02.10.19 12.29		1
Total TPH	PHC635	**122**	14.9	mg/kg	02.10.19 12.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.10.19 12.29	
o-Terphenyl	84-15-1	104	%	70-135	02.10.19 12.29	

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LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-007	Date Collected:	02.04.19 12.00	Sample Depth:	2.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.13.19 16.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.13.19 16.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.13.19 16.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.13.19 16.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.13.19 16.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.13.19 16.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.13.19 16.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	80	%	70-130	02.13.19 16.32	
1,4-Difluorobenzene	540-36-3	92	%	70-130	02.13.19 16.32	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-008	Date Collected:	02.04.19 12.25	Sample Depth:	0 - 2.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 11.30	Basis:	Wet Weight
Seq Number:	3078636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6090**	49.6	mg/kg	02.08.19 16.09		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.09.19 14.00	Basis:	Wet Weight
Seq Number:	3078602				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 09.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	**180**	15.0	mg/kg	02.10.19 09.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**35.1**	15.0	mg/kg	02.10.19 09.26		1
Total TPH	PHC635	**215**	15.0	mg/kg	02.10.19 09.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	02.10.19 09.26	
o-Terphenyl	84-15-1	91	%	70-135	02.10.19 09.26	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-008	Date Collected:	02.04.19 12.25	Sample Depth:	0 - 2.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.13.19 16.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.13.19 16.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.13.19 16.53	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.13.19 16.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.13.19 16.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.13.19 16.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.13.19 16.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	70-130	02.13.19 16.53	
4-Bromofluorobenzene	460-00-4	84	%	70-130	02.13.19 16.53	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-009	Date Collected:	02.04.19 12.30	Sample Depth:	0 - 2.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 11.30	Basis:	Wet Weight
Seq Number:	3078636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9690**	99.8	mg/kg	02.08.19 16.15		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.09.19 14.00	Basis:	Wet Weight
Seq Number:	3078602				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 09.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	**353**	15.0	mg/kg	02.10.19 09.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**65.3**	15.0	mg/kg	02.10.19 09.46		1
Total TPH	PHC635	**418**	15.0	mg/kg	02.10.19 09.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.10.19 09.46	
o-Terphenyl	84-15-1	101	%	70-135	02.10.19 09.46	

Certificate of Analytical Results 613652

LT Environmental, Inc., Arvada, CO

RDX 15-11

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	02.06.19 12.00
Lab Sample Id:	613652-009	Date Collected:	02.04.19 12.30	Sample Depth:	0 - 2.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.13.19 17.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.13.19 17.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.13.19 17.14	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.13.19 17.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.13.19 17.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.13.19 17.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.13.19 17.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	82	%	70-130	02.13.19 17.14	
1,4-Difluorobenzene	540-36-3	95	%	70-130	02.13.19 17.14	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 613652

LT Environmental, Inc.

RDX 15-11

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3078636 — Matrix: Solid — Date Prep: 02.08.19
MB Sample Id: 7671377-1-BLK — LCS Sample Id: 7671377-1-BKS — LCSD Sample Id: 7671377-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	235	94	238	95	90-110	1	20	mg/kg	02.08.19 13:11	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3078636 — Matrix: Soil — Date Prep: 02.08.19
Parent Sample Id: 613938-001 — MS Sample Id: 613938-001 S — MSD Sample Id: 613938-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	450	250	655	82	702	101	90-110	7	20	mg/kg	02.08.19 13:30	X

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3078636 — Matrix: Soil — Date Prep: 02.08.19
Parent Sample Id: 613938-002 — MS Sample Id: 613938-002 S — MSD Sample Id: 613938-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	523	250	753	92	770	99	90-110	2	20	mg/kg	02.08.19 14:59	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3078602 — Matrix: Solid — Date Prep: 02.09.19
MB Sample Id: 7671426-1-BLK — LCS Sample Id: 7671426-1-BKS — LCSD Sample Id: 7671426-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	887	89	902	90	70-135	2	20	mg/kg	02.10.19 02:02	
Diesel Range Organics (DRO)	<8.13	1000	921	92	903	90	70-135	2	20	mg/kg	02.10.19 02:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		121		122		70-135	%	02.10.19 02:02
o-Terphenyl	103		117		117		70-135	%	02.10.19 02:02

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

QC Summary 613652

LT Environmental, Inc.

RDX 15-11

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3078602 | Matrix: Soil | Date Prep: 02.09.19
Parent Sample Id: 614004-007 | MS Sample Id: 614004-007 S | MSD Sample Id: 614004-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	8.86	999	877	87	908	90	70-135	3	20	mg/kg	02.10.19 11:48	
Diesel Range Organics (DRO)	41.1	999	939	90	952	91	70-135	1	20	mg/kg	02.10.19 11:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		121		70-135	%	02.10.19 11:48
o-Terphenyl	114		116		70-135	%	02.10.19 11:48

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3078987 | Matrix: Solid | Date Prep: 02.12.19
MB Sample Id: 7671681-1-BLK | LCS Sample Id: 7671681-1-BKS | LCSD Sample Id: 7671681-1-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	0.0998	0.125	125	0.127	126	70-130	2	35	mg/kg	02.13.19 09:22	
Toluene	<0.00200	0.0998	0.102	102	0.103	102	70-130	1	35	mg/kg	02.13.19 09:22	
Ethylbenzene	<0.00200	0.0998	0.116	116	0.113	112	70-130	3	35	mg/kg	02.13.19 09:22	
m,p-Xylenes	<0.00399	0.200	0.232	116	0.232	115	70-130	0	35	mg/kg	02.13.19 09:22	
o-Xylene	<0.00200	0.0998	0.109	109	0.107	106	70-130	2	35	mg/kg	02.13.19 09:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		128		128		70-130	%	02.13.19 09:22
4-Bromofluorobenzene	86		86		89		70-130	%	02.13.19 09:22

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3078987 | Matrix: Soil | Date Prep: 02.12.19
Parent Sample Id: 613652-001 | MS Sample Id: 613652-001 S | MSD Sample Id: 613652-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.115	114	0.128	128	70-130	11	35	mg/kg	02.13.19 10:06	
Toluene	<0.00202	0.101	0.0914	90	0.101	101	70-130	10	35	mg/kg	02.13.19 10:06	
Ethylbenzene	<0.00202	0.101	0.0962	95	0.111	111	70-130	14	35	mg/kg	02.13.19 10:06	
m,p-Xylenes	<0.00403	0.202	0.199	99	0.226	113	70-130	13	35	mg/kg	02.13.19 10:06	
o-Xylene	<0.00202	0.101	0.0902	89	0.103	103	70-130	13	35	mg/kg	02.13.19 10:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		106		70-130	%	02.13.19 10:06
4-Bromofluorobenzene	87		78		70-130	%	02.13.19 10:06

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

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

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

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

Chain of Custody

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

Work Order No: 6013652

Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	[redacted] Adrian Baker
Company Name:	LT Environmental, Inc., Permian office	Company Name:	[redacted] LT Environmental
Address:	3300 North A Street	Address:	[redacted] Midland TX 79705
City, State ZIP:	Midland, TX 79705	City, State ZIP:	[redacted]
Phone:	432.704.5178	Email:	[redacted] llaumbach@ltenv.com, abaker@ltenv.com

Work Order Comments

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

Project Name:	RDX 15-11	Turn Around	
Project Number:	03481801 4 2RP4032	Routine	☒
P.O. Number:	2RP4545	Rush:	
Sampler's Name:	[redacted] Lynda Laumbach	Due Date:	02/13

SAMPLE RECEIPT			
Temperature (°C):	4.1/4.0	Temp Blank:	Yes (No)
Received Intact:	(Yes) No	Wet Ice:	(Yes) No
Cooler Custody Seals:	Yes No (N/A)	Thermometer ID	R8
Sample Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1
		Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS01	S	02/04	9:05	~~1'ave~~	1	X	X	X
FS02	S		9:45	~~1'ave~~	1	X	X	X
SW01	S		10:00	0-3'	1	X	X	X
SW02	S		10:10	0-1.5'	1	X	X	X
FS03	S		10:35	1'ave	1	X	X	X
FS05	S		11:20	2'ave	1	X	X	X
FS04	S		12:00	2.5'ave	1	X	X	X
SW04	S		12:25	0-2.5'	1	X	X	X
SW03	S	↓	12:30	0-2.5'	1	X	X	X

ANALYSIS REQUEST

1.5-3'
0.5-1.5'

Work Order Notes

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

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		02/05/2019 14:33	2		2/5/19 15:30
		2/6/19 1200	4		
			6		

Revised Date 051418 Rev. 2018.1

7743 99059847

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02/06/2019 12:00:00 PM

Work Order #: 613652

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 02/06/2019

Checklist reviewed by: Jessica Kramer Date: 02/06/2019

Jessica Kramer

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
District IV
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 267727

CONDITIONS

Operator:	OGRID:
WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	246289
	Action Number: 267727
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Closure approved.	10/2/2023
amaxwell	Final remediation and reclamation shall take place in accordance with 19.15.29.12 and 19.15.29.13 NMAC once the site is no longer being used for oil and gas operations	10/2/2023