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**APPROVED**

*By Olivia Yu at 9:12 am, Sep 05, 2018*

## **Remediation and Closure Report**

Rio Blanco 33 Federal #1  
30-025-36359 – 1RP-4734  
Talon Project No. 700794.234.01

NMOCD approves  
1RP-4734 for closure.

## **Prepared For:**

Devon Energy Production  
6488 Seven Rivers Hwy  
Artesia, New Mexico 88210

## **Prepared By:**

Kimberly M. Wilson  
TALON/LPE  
408 W. Texas Avenue  
Artesia, New Mexico 88210

**November 13, 2017**

Ms. Olivia Yu  
**NMOCD District I**  
1625 N. French Dr.  
Hobbs, NM 88240

Subject: **Remediation and Closure Report**  
Rio Blanco 33 Federal #1  
30-025-36359 – 1RP-4734

Dear Ms. Yu,

Devon Energy had contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The incident description, soil sampling results, remediation activities and closure request are submitted herein.

### **Site Information**

The Rio Blanco 33 Federal #1 located approximately forty (40) miles northwest of Jal, New Mexico. The legal location for this release is Unit Letter N, Section 33, Township 22 South and Range 34 East in Lea County, New Mexico. More specifically the latitude and longitude for the release are 32.3436928 North and -103.4783325 West. A site plan is presented in [Appendix I](#).

According to the soil survey provided by the United States Department of Agriculture National Resources Conservation Services (NRCS) the soil in this area is made up of Pyote and Maljamar fine sands. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is Holocene to middle Pleistocene in age and is comprised of eolian sands and piedmont deposits. Drainage courses in this area are normally dry.

### **Ground Water and Site Ranking**

The New Mexico Office of the State Engineer (NMOSE) database indicates the average ground water in the area to be 162-feet below ground surface (bgs). A copy of this report is attached in [Appendix II](#).

Therefore the ranking for this site is a **0** based on the following:

Depth to ground water	>100'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

Based upon the site ranking of **0**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene and 5,000 mg/kg for TPH. The NMOCD recommended guidelines for total chlorides is 600 mg/kg.

## Incident Description and Initial Remedial Actions

On June 4, 2017, lightning struck a 500BBL fiberglass produced water tank causing it to catch fire and structurally compromising it. The wells were immediately shut in. The fire department assisted in extinguishing the fire and approximately 310 barrels of produced water were lost. A vacuum truck recovered approximately 310bbls produced water. All fluid stayed inside the lined earthen berm containment on location. A site plan illustrating the work area is attached in [Appendix I](#).

## Remedial Actions Taken

Pursuant to the meeting between NMOCD District I Office with OCD, Devon and Talon personnel along with the follow-up emails dated August 22 and 31, 2017, all remediation activities agreed upon were adhered too. See attached NMOCD emails regarding the stipulations/conditions in [Appendix II](#).

The northern half of the former tank battery is the vicinity of S-1 was excavated to a depth of 1-foot deep. The southern portion of the work area was excavated to a depth of 2-feet deep and a 20-mil liner was keyed in and installed per NMOCD direction. Also as directed by NMOCD the area in the vicinity of S-3 was scraped to a depth of 0.25-feet deep and a confirmation sample was obtained. Sidewall samples of the excavated area were also collected per NMOCD direction. The laboratory results are presented below and [Appendix III](#) contains the complete laboratory analytical results.

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT
S-1 / B-1	0.0	<0.300	160	<10	942	266
	1.0	<0.300	448	<10	17.7	<10
	3.0	<0.300	192	<10	<10	<10
	4.0	<0.300	96	<10	<10	<10
	5.0	<0.300	48	<10	<10	<10
	10.0	<0.300	32	<10	<10	--
	15.0	<0.300	32	<10	<10	--
	20.0	<0.300	160	<10	<10	--
	25.0	<0.300	32	--	--	--
	30.0	<0.300	<16	--	--	--
S-2 / B-2	0.0	<0.300	1920	<10	13	<10
	1.0	<0.300	1620	<10	1050	127
	3.0	<0.300	560	<10	11.6	--
	4.0	<0.300	192	<10	<10	--
	5.0	<0.300	160	<10	<10	--
	10.0	<0.300	901	<10	<10	--
	15.0	<0.300	368	<10	<10	--
	20.0	<0.300	320	<10	<10	--
S-3	0.0	<0.300	992	<10	<10	--
	0.25	--	352	--	--	--



Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT
S-4	0.0	<0.300	32	<10	<10	--
S-5	0.0	<0.300	<16	<10	<10	--
S-6	0.0	<0.300	<16	<10	<10	--
W sidewall	1.0	--	208	<10	<10	<10
S sidewall	1.0	--	320	<10	<10	<10
S bottom	2.0	--	32	<10	<10	<10
E sidewall	1.0	--	432	<10	257	20.8
N sidewall	1.0	--	48	<10	11.4	<10
N bottom	2.0	--	288	<10	<10	<10

--Analyte Not Tested

All excavated soil was transported to Lea Land, LLC, a NMOCD approved disposal facility. The work area was backfilled with new/clean caliche which was obtained from Lea Land, LLC, machine compacted and then contoured to match the surrounding location

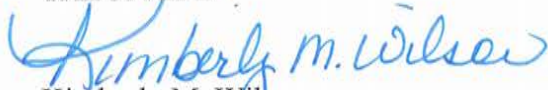
### Closure

On behalf of Devon Energy, we respectfully request that no further actions be required and that closure with respect to these releases be granted. A Final C-141 is also attached. See [Appendix IV](#).

Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,

TALON/LPE



Kimberly M. Wilson  
Project Manager



David J. Adkins  
District Manager

### Attachments:

- Appendix I Site Plan
- Appendix II Groundwater Data & Regulators Stipulations
- Appendix III Laboratory Results
- Appendix IV Final C-141

**APPENDIX I**  
**SITE MAP**



# Rio Blanco 33 Fed # 1

Lea County, New Mexico

- Legend**
- 0.25-foot Excavation
  - 1-foot Excavation
  - 2-foot Excavation and Liner
  - Sampling Locations



**APPENDIX II**  
**GROUNDWATER DATA**  
**REGULATORY STIPULATIONS**





# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,  
O=orphaned,

C=the file is closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">CP 01075 POD1</a>		CP	LE	1	1	08	23S	34E		641278	3577525	2503	430	20	410
<a href="#">CP 00872 POD1</a>		CP	LE	1	1	1 08	23S	34E		641225	3577504*	2555	494	305	189
<a href="#">CP 01130 POD2</a>		CP	LE	2	1	2 07	23S	34E		640674	3577549	2938	27		
<a href="#">CP 01130 POD1</a>		CP	LE	2	1	2 07	23S	34E		640662	3577558	2941	27		

Average Depth to Water: 162 feet

Minimum Depth: 20 feet

Maximum Depth: 305 feet

Record Count:4

UTMNAD83 Radius Search (in meters):

Easting (X): 643006

Northing (Y): 3579337

Radius: 3000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

8/1/17 10:15 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



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

Form C-141  
Revised August 8, 2011

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

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

### Release Notification and Corrective Action

#### OPERATOR

☒ Initial Report ☒ Final Report

Name of Company Devon Energy Production Company	Contact Randall Gladden, Production Foreman
Address 6488 Seven Rivers Hwy Artesia, NM 88210	Telephone No. 575-513-9463
Facility Name Rio Blanco 33 Federal #1	Facility Type Salt Water Disposal

Surface Owner Private	Mineral Owner Federal	API No 30-025-36359
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#### LOCATION OF RELEASE

Unit Letter N	Section 33	Township 22S	Range 34E	Feet from the 1000	North/South Line South	Feet from the 1620	East/West Line West	County Lea
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Latitude: 32.3436928 Longitude: -103.4783325

#### NATURE OF RELEASE

Type of Release Produced water	Volume of Release 310 BBLS	Volume Recovered 310 BBLS
Source of Release Produced water storage tank	Date and Hour of Occurrence 6/4/2017 9:18@ pm	Date and Hour of Discovery 6/4/2017 9:18@ pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? BLM-Shelly Tucker OCD-Olivia Yu	
By Whom? David Simmons, Assistant Production Foreman	Date and Hour BLM - 8/29/2016 @ 11:48 pm OCD - 8/29/2016 @ 11:58 pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse N/A	

**RECEIVED**

**By Olivia Yu at 9:58 am, Jun 26, 2017**

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

#### Describe Cause of Problem and Remedial Action Taken.\*

Lightning struck a 500BBL fiberglass produced water tank causing it to catch fire and structurally compromising it. The wells were immediately shut in. The fire department assisted in extinguishing the fire.

#### Describe Area Affected and Cleanup Action Taken.\*

Approximately 310 BBLS of produced water was in the tank when lightning struck. A vacuum truck recovered approximately 310bbls produced water. All fluid stayed inside the earthen berm containment on location.

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.

#### OIL CONSERVATION DIVISION

Signature: *Dana DeLaRosa*

Printed Name: Dana DeLaRosa

Title: Field Admin Support

E-mail Address: Dana.Delarosa@dmn.com

Date: Phone: 575.746-5594

Approved by Environmental Specialist:

Approval Date: 6/26/2017 Expiration Date:

Conditions of Approval:

see attached directive

Attached ☒

\* Attach Additional Sheets If Necessary

1RP-4734

nOY1717736160

pOY1717736475

## Kimberly M. Wilson

---

**From:** David Adkins  
**Sent:** Monday, September 18, 2017 12:16 PM  
**To:** Kimberly M. Wilson  
**Subject:** FW: [EXTERNAL] RE: Proposed remediation activities, Devon Rio Blanco 33 Fed 001, 1RP-4734

**David J. Adkins**  
**District Manager Artesia**  
Office: 575.746.8768  
Direct: 575.616.4022  
Cell: 575.441.4835  
Fax: 575.746.8905  
Emergency: 866.742.0742  
Web: [www.talonlpe.com](http://www.talonlpe.com)



**From:** Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]  
**Sent:** Friday, September 01, 2017 7:40 AM  
**To:** Shoemaker, Mike <[Mike.Shoemaker@dvn.com](mailto:Mike.Shoemaker@dvn.com)>; David Adkins <[dadkins@talonlpe.com](mailto:dadkins@talonlpe.com)>  
**Cc:** Fulks, Brett <[Brett.Fulks@dvn.com](mailto:Brett.Fulks@dvn.com)>  
**Subject:** RE: [EXTERNAL] RE: Proposed remediation activities, Devon Rio Blanco 33 Fed 001, 1RP-4734

Mr. Shoemaker:

Noted.

Thanks,  
Olivia

**From:** Shoemaker, Mike [<mailto:Mike.Shoemaker@dvn.com>]  
**Sent:** Friday, September 1, 2017 7:20 AM  
**To:** Yu, Olivia, EMNRD <[Olivia.Yu@state.nm.us](mailto:Olivia.Yu@state.nm.us)>; David Adkins <[dadkins@talonlpe.com](mailto:dadkins@talonlpe.com)>  
**Cc:** Fulks, Brett <[Brett.Fulks@dvn.com](mailto:Brett.Fulks@dvn.com)>  
**Subject:** Re: [EXTERNAL] RE: Proposed remediation activities, Devon Rio Blanco 33 Fed 001, 1RP-4734

Olivia,  
The battery size will be shrinking and S-2 will be outside the secondary containment area for the new battery so we are moving forward with installment of the 20 mil liner at 2'.

Thanks,

Get [Outlook for iOS](#)

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**From:** Yu, Olivia, EMNRD <[Olivia.Yu@state.nm.us](mailto:Olivia.Yu@state.nm.us)>  
**Sent:** Friday, September 1, 2017 7:15:34 AM  
**To:** David Adkins  
**Cc:** Shoemaker, Mike; Fulks, Brett  
**Subject:** [EXTERNAL] RE: Proposed remediation activities, Devon Rio Blanco 33 Fed 001, 1RP-4734



Good morning Mr. Adkins:

Thank you for the data in advance. Please include this document along with the remediation/closure report for 1RP-4734. Has the location of S-2 been confirmed to be under the new tank battery, and thus, does not necessitate a 20 mil liner at 2 ft. bgs because of the surface 80 mil liner under the entire tank battery?

Olivia

**From:** David Adkins [<mailto:dadkins@talonlpe.com>]

**Sent:** Thursday, August 31, 2017 4:57 PM

**To:** Yu, Olivia, EMNRD <[Olivia.Yu@state.nm.us](mailto:Olivia.Yu@state.nm.us)>

**Cc:** Shoemaker, Mike <[Mike.Shoemaker@dvn.com](mailto:Mike.Shoemaker@dvn.com)>; Fulks, Brett ([Brett.Fulks@dvn.com](mailto:Brett.Fulks@dvn.com)) <[Brett.Fulks@dvn.com](mailto:Brett.Fulks@dvn.com)>

**Subject:** RE: Proposed remediation activities, Devon Rio Blanco 33 Fed 001, 1RP-4734

Hello Olivia,

Attached please find the confirmation sample analysis for the above referenced project. The chloride results are all below the permissible limits of 600 mg/kg for this project. We will proceed with the liner installation per your direction tomorrow. An updated site map detailing sampling locations excavation areas will be provided in the closure report documentation along with a Final C-141. Thank you.

Respectfully,

**David J. Adkins**

**District Manager Artesia**

Office: 575.746.8768

Direct: 575.616.4022

Cell: 575.441.4835

Fax: 575.746.8905

Emergency: 866.742.0742

Web: [www.talonlpe.com](http://www.talonlpe.com)



**From:** Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]

**Sent:** Thursday, August 31, 2017 12:14 PM

**To:** David Adkins <[dadkins@talonlpe.com](mailto:dadkins@talonlpe.com)>

**Cc:** Shoemaker, Mike <[Mike.Shoemaker@dvn.com](mailto:Mike.Shoemaker@dvn.com)>

**Subject:** RE: Proposed remediation activities, Devon Rio Blanco 33 Fed 001, 1RP-4734

Dear Mr. Adkins:

NMOCD approves of the delineation completed for 1RP-4734. These are the conditions of approval for remediation:

1. Laboratory analyses (TPH extended and chlorides) of sidewall and bottom confirmation samples for each of the 3 proposed areas of excavation (S1, S-2, and S-3).
2. On a scaled map, outline the areas represented by S-1, S-2, S-3; notate the depth of excavation for each of the areas; and the locations of confirmation samples.
3. As B-2 at 10 ft. bgs for S-2 is above permissible chloride levels of 600 mg/kg, please properly key in a minimal 20-mil liner at the bottom of the proposed 2 ft. excavation.

Please confirm and inform if clarification is required.



Thanks,  
Olivia

**From:** David Adkins [<mailto:dadkins@talonlpe.com>]  
**Sent:** Tuesday, August 22, 2017 6:45 PM  
**To:** Yu, Olivia, EMNRD <[Olivia.Yu@state.nm.us](mailto:Olivia.Yu@state.nm.us)>  
**Cc:** Shoemaker, Mike <[Mike.Shoemaker@dvn.com](mailto:Mike.Shoemaker@dvn.com)>  
**Subject:** Proposed remediation activities, Devon Rio Blanco 33 Fed 001, 1RP-4734

Miss Yu,

Thank you for the time you afforded Mike and I this past Friday, it was very much appreciated. Pursuant to our conversations Devon Energy would like to immediately proceed with remediation in order to bring this facility back on line.

Attached please find the lab reports (2) from the drilling and the initial site assessment as well as a Google Earth image of the location. The lab report dated August 22, 2017 will be updated to include chlorides via Method 300 at two sample locations as discussed. (A rush analysis via Method 300 is a 3-5 day turnaround time.)

A data table summary of the laboratory results from inside the former battery area is presented below.

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO Ext.
<b>S-1 / B-1</b>	<b>0'</b>	<0.300	160	<10.0	1208
	<b>1'</b>	<0.300	448	<10.0	17.7
	<b>3'</b>	<0.300	192	<10.0	<10.0
	<b>4'</b>	<0.300	96	<10.0	<10.0
	<b>5'</b>	<0.300	48	<10.0	<10.0
<b>S-2 / B-2</b>	<b>0'</b>	<0.300	1920	<10.0	13.0
	<b>1'</b>	<0.300	1620	<10.0	1177
	<b>3'</b>	<0.300	560	<10.0	11.6
	<b>4'</b>	<0.300	192	<10.0	<10.0
	<b>5'</b>	<0.300	160	<10.0	<10.0

Pursuant to our meeting, our proposed scope of work is as follows:

- Excavate the former tank battery area to a depth of 1-foot deep in the northern portion of the battery (S-1/B-1) and the southern half of the battery (S-2/B-2) to a depth of 2-feet deep.
- Collect confirmation samples from the bottom and side walls of the excavation. Present the data to NMOCD for permission to close the excavation.
- The area immediately to the north of the battery (sample location S-3) will be scraped (0.25-0.5-feet deep) and a confirmation sample will also be collected and presented to the NMOCD prior to backfilling.
- The excavated areas will be backfilled with caliche and contoured to match the surrounding location.
- A closure report documenting all remedial actions along with a Final C-141 Form will be presented to the NMOCD .

Thank you for your time and consideration in this matter.  
Respectfully submitted,

**David J. Adkins**  
District Manager Artesia  
Office: 575.746.8768  
Direct: 575.616.4022

**APPENDIX III**  
**LABORATORY RESULTS**

August 08, 2017

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: RIO BLANCO

Enclosed are the results of analyses for samples received by the laboratory on 08/02/17 15:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

TALON LPE  
DAVID ADKINS  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received: 08/02/2017  
Reported: 08/08/2017  
Project Name: RIO BLANCO  
Project Number: 33 FED 1 - 700794.234.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/02/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-1 0' (H702034-01)**

BTEx 8021B			mg/kg								Analyzed By: MS	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier			
Benzene*	<0.050	0.050	08/04/2017	ND	2.27	113	2.00	1.36				
Toluene*	<0.050	0.050	08/04/2017	ND	2.10	105	2.00	0.0527				
Ethylbenzene*	<0.050	0.050	08/04/2017	ND	2.19	110	2.00	1.11				
Total Xylenes*	<0.150	0.150	08/04/2017	ND	6.57	109	6.00	0.942				
Total BTEx	<0.300	0.300	08/04/2017	ND								

Surrogate: 4-Bromofluorobenzene (PIL) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	08/07/2017	ND	448	112	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/03/2017	ND	198	99.2	200	4.50	
DRO >C10-C28	942	10.0	08/03/2017	ND	199	99.6	200	3.47	
EXT DRO >C28-C36	266	10.0	08/03/2017	ND					

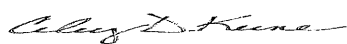
Surrogate: 1-Chlorooctane 88.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 99.9 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
DAVID ADKINS  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	08/02/2017	Sampling Date:	08/02/2017
Reported:	08/08/2017	Sampling Type:	Soil
Project Name:	RIO BLANCO	Sampling Condition:	Cool & Intact
Project Number:	33 FED 1 - 700794.234.01	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY, NM		

**Sample ID: S-1 1' (H702034-02)**

BTEX 8021B			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/04/2017	ND	2.27	113	2.00	1.36		
Toluene*	<0.050	0.050	08/04/2017	ND	2.10	105	2.00	0.0527		
Ethylbenzene*	<0.050	0.050	08/04/2017	ND	2.19	110	2.00	1.11		
Total Xylenes*	<0.150	0.150	08/04/2017	ND	6.57	109	6.00	0.942		
Total BTEX	<0.300	0.300	08/04/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	448	16.0	08/07/2017	ND	448	112	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/04/2017	ND	190	95.0	200	1.88	
DRO >C10-C28	17.7	10.0	08/04/2017	ND	192	95.9	200	2.00	
EXT DRO >C28-C36	<10.0	10.0	08/04/2017	ND					

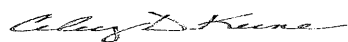
Surrogate: 1-Chlorooctane 92.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.4 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
DAVID ADKINS  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	08/02/2017	Sampling Date:	08/02/2017
Reported:	08/08/2017	Sampling Type:	Soil
Project Name:	RIO BLANCO	Sampling Condition:	Cool & Intact
Project Number:	33 FED 1 - 700794.234.01	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY, NM		

**Sample ID: S-2 0' (H702034-03)**

BTX 8021B			mg/kg							Analyzed By: MS
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/04/2017	ND	2.27	113	2.00	1.36		
Toluene*	<0.050	0.050	08/04/2017	ND	2.10	105	2.00	0.0527		
Ethylbenzene*	<0.050	0.050	08/04/2017	ND	2.19	110	2.00	1.11		
Total Xylenes*	<0.150	0.150	08/04/2017	ND	6.57	109	6.00	0.942		
Total BTX	<0.300	0.300	08/04/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 72-148

Chloride, SM4500Cl-B			mg/kg							Analyzed By: AC
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1920	16.0	08/07/2017	ND	448	112	400	3.64		

TPH 8015M			mg/kg							Analyzed By: MS
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/04/2017	ND	190	95.0	200	1.88		
DRO >C10-C28	13.0	10.0	08/04/2017	ND	192	95.9	200	2.00		
EXT DRO >C28-C36	<10.0	10.0	08/04/2017	ND						

Surrogate: 1-Chlorooctane 85.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.7 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

 Received: 08/02/2017  
 Reported: 08/08/2017  
 Project Name: RIO BLANCO  
 Project Number: 33 FED 1 - 700794.234.01  
 Project Location: LEA COUNTY, NM

 Sampling Date: 08/02/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-2 1' (H702034-04)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/04/2017	ND	2.27	113	2.00	1.36	
Toluene*	<0.050	0.050	08/04/2017	ND	2.10	105	2.00	0.0527	
Ethylbenzene*	<0.050	0.050	08/04/2017	ND	2.19	110	2.00	1.11	
Total Xylenes*	<0.150	0.150	08/04/2017	ND	6.57	109	6.00	0.942	
Total BTEX	<0.300	0.300	08/04/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1620	16.0	08/07/2017	ND	448	112	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/04/2017	ND	190	95.0	200	1.88	
DRO >C10-C28	1050	10.0	08/04/2017	ND	192	95.9	200	2.00	
EXT DRO >C28-C36	127	10.0	08/04/2017	ND					

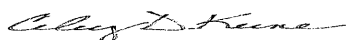
Surrogate: 1-Chlorooctane 98.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 120 % 34.7-157

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

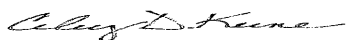
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Cardinal Laboratories

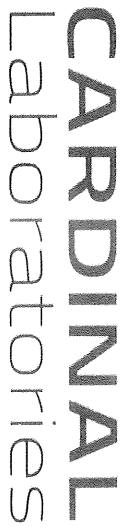
\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

[illegible]



August 24, 2017

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: RIO BLANCO

Enclosed are the results of analyses for samples received by the laboratory on 08/18/17 16:08.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-9. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)


Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905Reported:  
24-Aug-17 16:46

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-1 3'	H702213-01	Soil	17-Aug-17 15:30	18-Aug-17 16:08
B-1 4'	H702213-02	Soil	17-Aug-17 15:35	18-Aug-17 16:08
B-1 5'	H702213-03	Soil	17-Aug-17 15:40	18-Aug-17 16:08
B-1 10'	H702213-04	Soil	17-Aug-17 15:50	18-Aug-17 16:08
B-1 15'	H702213-05	Soil	17-Aug-17 16:00	18-Aug-17 16:08
B-1 20'	H702213-06	Soil	17-Aug-17 16:15	18-Aug-17 16:08
B-2 3'	H702213-07	Soil	17-Aug-17 14:30	18-Aug-17 16:08
B-2 4'	H702213-08	Soil	17-Aug-17 14:35	18-Aug-17 16:08
B-2 5'	H702213-09	Soil	17-Aug-17 14:40	18-Aug-17 16:08
B-2 10'	H702213-10	Soil	17-Aug-17 14:50	18-Aug-17 16:08
B-2 15'	H702213-11	Soil	17-Aug-17 15:00	18-Aug-17 16:08
B-2 20'	H702213-12	Soil	17-Aug-17 15:15	18-Aug-17 16:08
S-3 0'	H702213-13	Soil	17-Aug-17 14:30	18-Aug-17 16:08
S-4 0'	H702213-14	Soil	17-Aug-17 14:40	18-Aug-17 16:08
S-5 0'	H702213-15	Soil	17-Aug-17 14:50	18-Aug-17 16:08
S-6 0'	H702213-16	Soil	17-Aug-17 15:00	18-Aug-17 16:08

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-1 3'**

**H702213-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	192		16.0	mg/kg	4	7082103	AC	21-Aug-17	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			105 %	72-148		7081901	MS	19-Aug-17	8021B	
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#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	
Surrogate: 1-Chlorooctane			83.1 %	28.3-164		7081902	MS	19-Aug-17	8015B	
Surrogate: 1-Chlorooctadecane			86.8 %	34.7-157		7081902	MS	19-Aug-17	8015B	

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-1 4'**  
**H702213-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**

#### Inorganic Compounds

Chloride	96.0		16.0	mg/kg	4	7082103	AC	21-Aug-17	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 106 % 72-148 7081901 MS 19-Aug-17 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	

Surrogate: 1-Chlorooctane 93.3 % 28.3-164 7081902 MS 19-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 97.6 % 34.7-157 7081902 MS 19-Aug-17 8015B

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Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-1 5'**  
**H702213-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	48.0		16.0	mg/kg	4	7082103	AC	21-Aug-17	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148 7081901 MS 19-Aug-17 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	

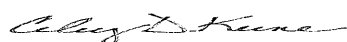
Surrogate: 1-Chlorooctane 88.6 % 28.3-164 7081902 MS 19-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 93.3 % 34.7-157 7081902 MS 19-Aug-17 8015B

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-1 10'**  
**H702213-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	32.0		16.0	mg/kg	4	7082103	AC	21-Aug-17	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148 7081901 MS 19-Aug-17 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	

Surrogate: 1-Chlorooctane 86.3 % 28.3-164 7081902 MS 19-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 91.0 % 34.7-157 7081902 MS 19-Aug-17 8015B

### Green Analytical Laboratories


#### Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B708206	JDA	23-Aug-17	EPA300.0	
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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-1 15'**  
**H702213-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Chloride	32.0		16.0	mg/kg	4	7082103	AC	21-Aug-17	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148 7081901 MS 19-Aug-17 8021B

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	19-Aug-17	8015B	

Surrogate: 1-Chlorooctane 85.3 % 28.3-164 7081902 MS 19-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 90.1 % 34.7-157 7081902 MS 19-Aug-17 8015B

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-1 20'**  
**H702213-06 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	160		16.0	mg/kg	4	7082103	AC	21-Aug-17	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148 7081901 MS 19-Aug-17 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

Surrogate: 1-Chlorooctane 85.3 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 92.5 % 34.7-157 7081902 MS 20-Aug-17 8015B

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Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-2 3'**  
**H702213-07 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**

**Inorganic Compounds**

Chloride	560		16.0	mg/kg	4	7082103	AC	21-Aug-17	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148 7081901 MS 19-Aug-17 8021B

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	11.6		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

Surrogate: 1-Chlorooctane 79.4 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 84.7 % 34.7-157 7081902 MS 20-Aug-17 8015B

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*Ceiley D. Keene*

Ceiley D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-2 4'**  
**H702213-08 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	192		16.0	mg/kg	4	7082103	AC	21-Aug-17	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148 7081901 MS 19-Aug-17 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

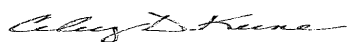
Surrogate: 1-Chlorooctane 87.7 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 93.6 % 34.7-157 7081902 MS 20-Aug-17 8015B

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-2 5'**  
**H702213-09 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	160		16.0	mg/kg	4	7082104	AC	21-Aug-17	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148 7081901 MS 19-Aug-17 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

Surrogate: 1-Chlorooctane 85.5 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 89.6 % 34.7-157 7081902 MS 20-Aug-17 8015B

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-2 10'**  
**H702213-10 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Chloride	901		16.0	mg/kg	4	7082104	AC	22-Aug-17	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	19-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	19-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148 7081901 MS 19-Aug-17 8021B

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

Surrogate: 1-Chlorooctane 86.2 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 89.8 % 34.7-157 7081902 MS 20-Aug-17 8015B

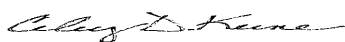
**Green Analytical Laboratories**
**Soluble (DI Water Extraction)**

Chloride	869		20.0	mg/kg wet	20	B708206	JDA	23-Aug-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-2 15'**  
**H702213-11 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**

**Inorganic Compounds**

Chloride	368		16.0	mg/kg	4	7082104	AC	21-Aug-17	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	20-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148 7081901 MS 20-Aug-17 8021B

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

Surrogate: 1-Chlorooctane 86.8 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 89.9 % 34.7-157 7081902 MS 20-Aug-17 8015B

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**B-2 20'**  
**H702213-12 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**

**Inorganic Compounds**

Chloride	320		16.0	mg/kg	4	7082104	AC	21-Aug-17	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	20-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148 7081901 MS 20-Aug-17 8021B

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

Surrogate: 1-Chlorooctane 81.8 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 91.3 % 34.7-157 7081902 MS 20-Aug-17 8015B

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

S-3 0'  
H702213-13 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	992	MDL	16.0	mg/kg	4	7082104	AC	21-Aug-17	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	MDL	0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Toluene*	<0.050	MDL	0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Ethylbenzene*	<0.050	MDL	0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total Xylenes*	<0.150	MDL	0.150	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total BTEX	<0.300	MDL	0.300	mg/kg	50	7081901	MS	20-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	104 %	MDL	72-148	7081901	MS	20-Aug-17	8021B	
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#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0	MDL	10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0	MDL	10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

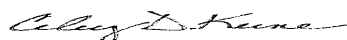
Surrogate: 1-Chlorooctane	76.0 %	MDL	28.3-164	7081902	MS	20-Aug-17	8015B	
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Surrogate: 1-Chlorooctadecane	80.4 %	MDL	34.7-157	7081902	MS	20-Aug-17	8015B	
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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

S-4 0'  
H702213-14 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	32.0		16.0	mg/kg	4	7082104	AC	21-Aug-17	4500-Cl-B	
----------	------	--	------	-------	---	---------	----	-----------	-----------	--

#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	20-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148 7081901 MS 20-Aug-17 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

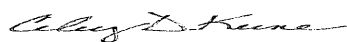
Surrogate: 1-Chlorooctane 85.0 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 86.9 % 34.7-157 7081902 MS 20-Aug-17 8015B

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

S-5 0'  
H702213-15 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	<16.0		16.0	mg/kg	4	7082104	AC	21-Aug-17	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	20-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148 7081901 MS 20-Aug-17 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

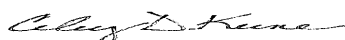
Surrogate: 1-Chlorooctane 77.2 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 81.5 % 34.7-157 7081902 MS 20-Aug-17 8015B

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**S-6 0'**  
**H702213-16 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Chloride	<16.0		16.0	mg/kg	4	7082104	AC	21-Aug-17	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7081901	MS	20-Aug-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7081901	MS	20-Aug-17	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148 7081901 MS 20-Aug-17 8021B

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7081902	MS	20-Aug-17	8015B	

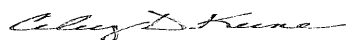
Surrogate: 1-Chlorooctane 83.2 % 28.3-164 7081902 MS 20-Aug-17 8015B

Surrogate: 1-Chlorooctadecane 86.0 % 34.7-157 7081902 MS 20-Aug-17 8015B

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210

 Project: RIO BLANCO  
 Project Number: 700794.234.01  
 Project Manager: DAVID ADKINS  
 Fax To: (575) 745-8905

 Reported:  
 24-Aug-17 16:46

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 7082103 - 1:4 DI Water**
**Blank (7082103-BLK1)**

Prepared &amp; Analyzed: 21-Aug-17

Chloride	ND	16.0	mg/kg
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**LCS (7082103-BS1)**

Prepared &amp; Analyzed: 21-Aug-17

Chloride	416	16.0	mg/kg	400	104	80-120
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**LCS Dup (7082103-BSD1)**

Prepared &amp; Analyzed: 21-Aug-17

Chloride	416	16.0	mg/kg	400	104	80-120	0.00	20
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**Batch 7082104 - 1:4 DI Water**
**Blank (7082104-BLK1)**

Prepared &amp; Analyzed: 21-Aug-17

Chloride	ND	16.0	mg/kg
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**LCS (7082104-BS1)**

Prepared &amp; Analyzed: 21-Aug-17

Chloride	448	16.0	mg/kg	400	112	80-120
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**LCS Dup (7082104-BSD1)**

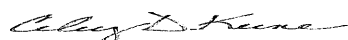
Prepared &amp; Analyzed: 21-Aug-17

Chloride	448	16.0	mg/kg	400	112	80-120	0.00	20
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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210

 Project: RIO BLANCO  
 Project Number: 700794.234.01  
 Project Manager: DAVID ADKINS  
 Fax To: (575) 745-8905

 Reported:  
 24-Aug-17 16:46

**Volatile Organic Compounds by EPA Method 8021 - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 7081901 - Volatiles**
**Blank (7081901-BLK1)**

Prepared &amp; Analyzed: 19-Aug-17

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0541		mg/kg	0.0500		108	72-148			

**LCS (7081901-BS1)**

Prepared &amp; Analyzed: 19-Aug-17

Benzene	1.96	0.050	mg/kg	2.00		98.0	79.5-124			
Toluene	2.01	0.050	mg/kg	2.00		101	75.5-127			
Ethylbenzene	2.18	0.050	mg/kg	2.00		109	77.7-125			
Total Xylenes	6.46	0.150	mg/kg	6.00		108	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0541		mg/kg	0.0500		108	72-148			

**LCS Dup (7081901-BSD1)**

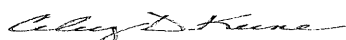
Prepared &amp; Analyzed: 19-Aug-17

Benzene	2.00	0.050	mg/kg	2.00		99.9	79.5-124	1.93	6.5	
Toluene	2.06	0.050	mg/kg	2.00		103	75.5-127	2.25	7.02	
Ethylbenzene	2.23	0.050	mg/kg	2.00		111	77.7-125	2.12	7.83	
Total Xylenes	6.60	0.150	mg/kg	6.00		110	70.9-124	2.05	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0536		mg/kg	0.0500		107	72-148			

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**Petroleum Hydrocarbons by GC FID - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 7081902 - General Prep - Organics**
**Blank (7081902-BLK1)**

Prepared &amp; Analyzed: 19-Aug-17

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	45.0		mg/kg	50.0		89.9	28.3-164			
Surrogate: 1-Chlorooctadecane	46.4		mg/kg	50.0		92.9	34.7-157			

**LCS (7081902-BS1)**

Prepared &amp; Analyzed: 19-Aug-17

GRO C6-C10	181	10.0	mg/kg	200		90.4	76.6-119			
DRO >C10-C28	184	10.0	mg/kg	200		91.9	81.4-124			
Total TPH C6-C28	365	10.0	mg/kg	400		91.2	79.4-121			
Surrogate: 1-Chlorooctane	45.9		mg/kg	50.0		91.7	28.3-164			
Surrogate: 1-Chlorooctadecane	49.9		mg/kg	50.0		99.9	34.7-157			

**LCS Dup (7081902-BSD1)**

Prepared &amp; Analyzed: 19-Aug-17

GRO C6-C10	193	10.0	mg/kg	200		96.6	76.6-119	6.61	7.94	
DRO >C10-C28	199	10.0	mg/kg	200		99.6	81.4-124	7.97	9.83	
Total TPH C6-C28	392	10.0	mg/kg	400		98.1	79.4-121	7.30	8.57	
Surrogate: 1-Chlorooctane	49.1		mg/kg	50.0		98.3	28.3-164			
Surrogate: 1-Chlorooctadecane	52.0		mg/kg	50.0		104	34.7-157			

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
408 W. TEXAS AVE.  
ARTESIA NM, 88210

Project: RIO BLANCO  
Project Number: 700794.234.01  
Project Manager: DAVID ADKINS  
Fax To: (575) 745-8905

Reported:  
24-Aug-17 16:46

**Soluble (DI Water Extraction) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B708206 - General Prep - Wet Chem</b>										
<b>Blank (B708206-BLK1)</b>				Prepared: 22-Aug-17 Analyzed: 23-Aug-17						
Chloride	ND	10.0	mg/kg wet							
<b>LCS (B708206-BS1)</b>				Prepared: 22-Aug-17 Analyzed: 23-Aug-17						
Chloride	237	10.0	mg/kg wet	250		94.9	85-115			
<b>LCS Dup (B708206-BSD1)</b>				Prepared: 22-Aug-17 Analyzed: 23-Aug-17						
Chloride	240	10.0	mg/kg wet	250		95.8	85-115	0.956	20	

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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

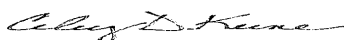
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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**Cardinal Laboratories**

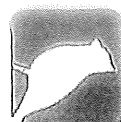
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---

Celey D. Keene, Lab Director/Quality Manager



# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Mariand, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2475

Company Name: Talon/LPE

Project Manager: DAVID ADKINS

Address: 408 W. Texas Ave.

City: Artesia

Phone #: 575-746-8768

State: NM Zip: 88210

Project #: 706794.234.01

Project Owner: Deval Energy

Project Name: Rio Blanco 33 Fed #1

Project Location: Lea County NM

Sample Name: D. Adkins

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

H702213

B-1 3'

B-1 4'

B-1 5'

B-1 6'

B-1 15'

B-1 20'

B-2 3'

B-2 4'

B-2 5'

B-2 10'

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER:

ACID/BASE:

ICE/COOL

OTHER:

DATE

TIME

8/11/18 1530

1535

1540

1550

1600

1615

1430

1435

1440

1450

✓

✓

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✓

✓

✓

✓

✓

BTEX

TPH

TOTAL CHLORIDES

chlorides (via 300)

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

Relinquished By:

Date: 8-18-17

Received By:

Phone Result:

Yes

No

Yes

No

Add'l Phone #:

Add'l Fax #:

Relinquished By:

Date: 8-18-17

Received By:

Phone Result:

Yes

No

Yes

No

Add'l Phone #:

Add'l Fax #:

Delivered By: (Circle One) 0.92

Sample Condition

Cool Intact

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

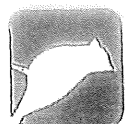
No

Yes

No

Yes

No



# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Maryland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: Talon/LPE

Project Manager: DAVUD ADIKUS

Address: 408 W. Texas Ave.

City: Artesia

Phone #: 575-746-8768

State: NM Zip: 88210

Project #: 706794.234.01

Fax #: 575-746-8905

Project Name:

Rio Blanco 33 Fed #1

Project Location:

Lea County, NM

Sample Name:

D-ADIKUS

FOR LAB USE ONLY

Lab ID.

Sample ID.

H107213

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(C)RAB OR (C)OMP.

# CONTAINERS

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WASTEWATER

SOIL

OIL

SLUDGE

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ACID/BASE:

ICE/COOL

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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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August 31, 2017

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: RIO BLANCO 33 FED 1

Enclosed are the results of analyses for samples received by the laboratory on 08/30/17 16:47.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	08/30/2017	Sampling Date:	08/28/2017
Reported:	08/31/2017	Sampling Type:	Soil
Project Name:	RIO BLANCO 33 FED 1	Sampling Condition:	Cool & Intact
Project Number:	700794.243.01	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY, NM		

**Sample ID: W. SIDE WALL 1.0' (H702317-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>208</b>	16.0	08/31/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/31/2017	ND	169	84.3	200	3.20	
DRO >C10-C28	<10.0	10.0	08/31/2017	ND	175	87.6	200	5.40	
EXT DRO >C28-C36	<10.0	10.0	08/31/2017	ND					
<i>Surrogate: 1-Chlorooctane</i>									
	92.5 %	28.3-164							
<i>Surrogate: 1-Chlorooctadecane</i>									
	94.5 %	34.7-157							

**Sample ID: S. SIDE WALL 1.0' (H702317-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>320</b>	16.0	08/31/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/31/2017	ND	169	84.3	200	3.20	
DRO >C10-C28	<10.0	10.0	08/31/2017	ND	175	87.6	200	5.40	
EXT DRO >C28-C36	<10.0	10.0	08/31/2017	ND					
<i>Surrogate: 1-Chlorooctane</i>									
	93.0 %	28.3-164							
<i>Surrogate: 1-Chlorooctadecane</i>									
	103 %	34.7-157							

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

 Received: 08/30/2017  
 Reported: 08/31/2017  
 Project Name: RIO BLANCO 33 FED 1  
 Project Number: 700794.243.01  
 Project Location: LEA COUNTY, NM

 Sampling Date: 08/28/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: E. SIDE WALL 1.0' (H702317-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>432</b>	16.0	08/31/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/31/2017	ND	169	84.3	200	3.20	
<b>DRO &gt;C10-C28</b>	<b>257</b>	10.0	08/31/2017	ND	175	87.6	200	5.40	
<b>EXT DRO &gt;C28-C36</b>	<b>20.8</b>	10.0	08/31/2017	ND					

Surrogate: 1-Chlorooctane 90.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 104 % 34.7-157

**Sample ID: N. SIDE WALL 1.0' (H702317-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	08/31/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/31/2017	ND	169	84.3	200	3.20	
<b>DRO &gt;C10-C28</b>	<b>11.4</b>	10.0	08/31/2017	ND	175	87.6	200	5.40	
EXT DRO >C28-C36	<10.0	10.0	08/31/2017	ND					

Surrogate: 1-Chlorooctane 91.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.7 % 34.7-157

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TALON LPE  
DAVID ADKINS  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received: 08/30/2017  
Reported: 08/31/2017  
Project Name: RIO BLANCO 33 FED 1  
Project Number: 700794.243.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/28/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: N. BOTTOM EXCAV. 1.0' (H702317-05)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>288</b>	16.0	08/31/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/31/2017	ND	169	84.3	200	3.20	
DRO >C10-C28	<10.0	10.0	08/31/2017	ND	175	87.6	200	5.40	
EXT DRO >C28-C36	<10.0	10.0	08/31/2017	ND					
<i>Surrogate: 1-Chlorooctane</i>									
	94.9 %	28.3-164							
<i>Surrogate: 1-Chlorooctadecane</i>									
	103 %	34.7-157							

**Sample ID: S. BOTTOM EXCAV. 2.0' (H702317-06)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	08/31/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/31/2017	ND	169	84.3	200	3.20	
DRO >C10-C28	<10.0	10.0	08/31/2017	ND	175	87.6	200	5.40	
EXT DRO >C28-C36	<10.0	10.0	08/31/2017	ND					
<i>Surrogate: 1-Chlorooctane</i>									
	93.7 %	28.3-164							
<i>Surrogate: 1-Chlorooctadecane</i>									
	99.4 %	34.7-157							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
DAVID ADKINS  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received: 08/30/2017  
Reported: 08/31/2017  
Project Name: RIO BLANCO 33 FED 1  
Project Number: 700794.243.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/28/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

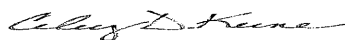
**Sample ID: S-3 0.25' (H702317-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	08/31/2017	ND	448	112	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

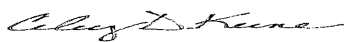
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Cardinal Laboratories

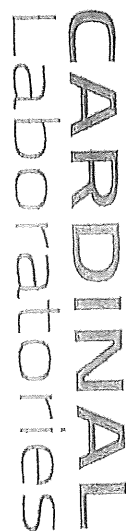
\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 7 of 7



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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August 31, 2017

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: RIO BLANCO 33 FED 1

Enclosed are the results of analyses for samples received by the laboratory on 08/28/17 16:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Coley D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
 DAVID ADKINS  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received: 08/28/2017  
 Reported: 08/31/2017  
 Project Name: RIO BLANCO 33 FED 1  
 Project Number: 700794.234.01  
 Project Location: LEA COUNTY, NM

Sampling Date: 08/17/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: B-2 25' (H702274-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	08/31/2017	ND	432	108	400	0.00	

**Sample ID: B-2 30' (H702274-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/31/2017	ND	432	108	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



### Notes and Definitions

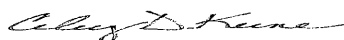
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Cardinal Laboratories

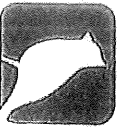
\*=Accredited Analyte

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---

Celey D. Keene, Lab Director/Quality Manager



# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Merland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: Talon/LPE

Project Manager:

D. Adams

Address: 408 W. Texas Ave.

City: Artesia

State: NM Zip: 88210

Phone #: 575-746-8768

Fax #: 575-746-8905

Project #: 700794.234.01

Project Owner: Devon Energy

Project Name: Rio Blanco 33 Fed # 1

City: State: Zip:

Project Location: Lea County NM

Phone #:

Sample Name: D. Adams

Fax #:

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

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2 B-2 30'

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## **APPENDIX IV**

### **FINAL C-141**