# **RECEIVED** By JKeyes at 12:53 pm, Jun 08, 2016

APPROVED

Confirmation sample at S3. Sidewall samples required.



## Work Plan Lime Rock Resources II-A, L.P.:

## North Vacuum Abo North Unit (NVANU) #82 Battery

June 6, 2016

**Prepared By:** 

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

## **Prepared For:**

Lime Rock Resources II-A, L.P.

Mr. Jamie Keyes NMOCD District 1 1625 N. French Dr. Hobbs, NM 88240

Subject: Soil Assessment and Remediation Work Plan Lime Rock Resources II-A, L.P. North Vacuum Abo North Unit (NVANU) #82 Battery API # 30-025-32693

Dear Mr. Keyes,

Lime Rock Resources (Lime Rock) has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The results of our soil assessment and proposed remediation activities consist of the following.

## **Site Information**

The NVANU #82 Battery is located approximately fifteen (15) miles west of Lovington, New Mexico. The legal location for this release is Unit Letter P, Section 2, Township 17 South and Range 34 East in Lea County, New Mexico. More specifically the latitude and longitude for the release are 32.857914 North and -103.5242233 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, the soil in this area is made up of Kimbrough-Lea land complex. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is comprised of calcareous-loamy alluvium and calcareous-loamy eolian sands which includes silty soils under lain by sedimentary rock and hard caliche. Drainage courses in this area are normally dry.

## Ground Water and Site Ranking

The New Mexico State Engineer web site indicates the nearest ground water data to be in S10-T17S-R34E. The ground water in Section 10 is reported to be at depth of 92' below ground surface (bgs). See Appendix II for the referenced groundwater data.

Therefore the ranking for this site is a **10** based on the following:

Depth to ground water	50' - 100'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

Based upon the site ranking of **10**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, 1,000 mg/kg for TPH and 1,000 mg/kg for total chlorides.

## **Incident Description and Initial Remedial Actions**

On March 15, 2016 Talon personnel met with Amber Groves from the New Mexico State Land Office (NMSLO) and Eddie Elliott with Lime Rock Resources at the NVANU #82 (historic) battery to discuss the concerns of the State Land Office. A site assessment and soil sampling activities for the construction of a work plan was performed. During our site assessment no obvious noxious or undesirable weeds such as African rue, Russian thistle, etc. were noted. Grab soil samples were collected utilizing a hand auger to a depth of 0.5' below ground surface where refusal was encountered.

On April 5, 2015 Talon personnel returned to the site to obtain deeper vertical delineation samples utilizing a backhoe to a total depth of 2-feet below ground surface where hard rock refusal was encountered.

An air rotary drill rig was then mobilized for further vertical delineation of the impacted area. Vertical delineation sampling was carried out April 12, 2016. Laboratory results are presented below.

## Laboratory Results

See Appendix IV for complete report of laboratory results.

Sample ID	Depth	BTEX	Chlorides	TPH (mg/kg)	TPH (mg/kg)
_	(feet)	(mg/kg)	(mg/kg)	GRO	DRO
S-1	0'	< 0.300	1550	<50	<50
Refusal	0.5'	< 0.300	1490	<50	68.2
S-2	0'	< 0.300	4560	23.0	207
Refusal	0.5'	< 0.300	2760	<10	379
S-3 Refusal	0'	< 0.300	112	<200	22200

March 24, 2016

April 13, 2016

Sample ID	Depth	BTEX	Chlorides	TPH (mg/kg)	TPH (mg/kg)
	(feet)	(mg/kg)	(mg/kg)	GRO	DRO
S-1	1'	< 0.300	2240	<10	<10
Refusal	2'	< 0.300	880	<10	<10
S-2	1'	0.882	7360	<10	300
Refusal	2'	3.48	5040	52.2	2730
S-3 Refusal	1'	287	80	708	1960
S-4	0.25'	0.758	3280	<10	10.9

1	20	2016
April	20	2010
Trhin	20,	2010

Sample ID	Depth	BTEX	Chlorides	TPH (mg/kg)	TPH (mg/kg)
1	(feet)	(mg/kg)	(mg/kg)	GRO	DRO
B-1 / S-1	5'		1730		
	10'		1840		
	15'		1380		
	20'		288		
B-2 / S-2	5'	< 0.300	2960	<10	342
	10'	< 0.300	2440	<10	<10
	15'		2280	<10	<10
	20'		2240	<10	<10
	25'		1230	<10	<10
	30'		848	<10	<10
B-3 / S-3	5'	< 0.300	176	<10	<10
	10'	< 0.300	144	<10	<10
	15'	< 0.300	288	<10	<10
	20'	< 0.300	240	<10	<10
B-4 / S-4	2'		352		
	5'		400		
	10'		400		
	15'		240		
	20'		208		

--Analyte Not Tested

April 26, 2016

Sample ID	Depth	BTEX	Chlorides	TPH (mg/kg)	TPH (mg/kg)
	(feet)	(mg/kg)	(mg/kg)	GRO	DRO
B-2	35'		160		
Refusal	40'		128		

--Analyte Not Tested

## **Proposed Remedial actions**

- The impacted area within the old tank battery surrounding S-1 and S-2 will be excavated down to the depth of 4-feet deep or the rock shelf, whichever comes first. A 20 mil liner will be installed into the bottom of the excavation to encapsulate the remaining impacted soil.
- The impacted area in the vicinity of sample location S-3 will be excavated to a depth of 2-feet deep. The area around S-4 will be excavated to a depth of 1-foot deep.
- All of the excavated material will be hauled to an NMOCD approved solid waste disposal facility.

- The excavated areas will be backfilled with locally obtained soil. The backfilled areas in the pasture will be contoured to match the surrounding terrain and left in a "rough" condition to approximate natural surface deviations, control erosion, and promote revegetation.
- The area will be seeded with the NMSLO recommended seed mixture for the area. Immediately following preparation of the site, a Culti-Pack Seed Drill will be utilized to plant 1 acre of BLM #2.
- The site will be monitored by Lime Rock Resources personnel to insure proper revegetation is achieved. The NMSLO policy states that the goal is to obtain native plant levels and diversity equal to or exceeding the natural potential levels.
- A final closure report documenting all remedial actions, analytical results, Final C-141 and seeding labels will be provided to the NMOCD Hobbs Office and the NMSLO along with the Revegetation Forms.

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

Kimberly M. Wilson Project Manager

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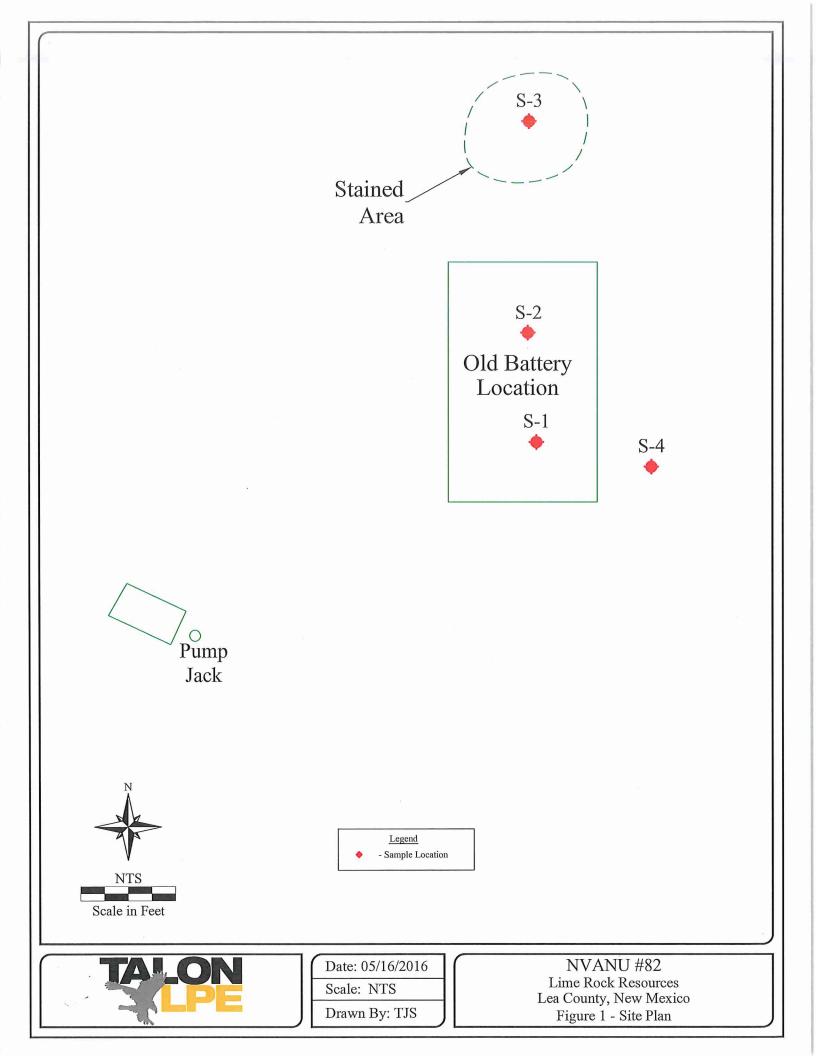
David J. Adkins District Manager

Attachments:

Appendix ISite PlanAppendix IIGroundwater DataAppendix IIIInitial C-141Appendix IVLaboratory Results

**APPENDIX I** 

## SITE MAP



## **APPENDIX II**

## **GROUNDWATER DATA**

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# 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)						2=NE 3 st to lar	3=SW 4=SE gest) (N	:) AD83 UTM in me	eters)	(	n feet)	
	POD						Ч						
POD Number	Sub- Code basin C	ount		Q C 16 4		Tws	Rng	х	Y	Distance	the second se	Depth Water (	
L 03241	L	LE				17S		636425	3636145* 🌍	584	122	92	30
L 06134	L	LE		2 4	03	17S	34E	636411	3636949* 🌍	710	175	95	80
L 03011	L	LE			02	17S	34E	637425	3637158* 🌑	865	121	80	41
L 05806	L	LE		2 2	! 11	17S	34E	638036	3636179* 🌍	1148	155	105	50
L 02749	L	LE		4 2	11	17S	34E	638043	3635776* 🌍	1310	150	85	65
L 06074	L	LE		2 2	03	17S	34E	636395	3637753* 🌑	1401	172	95	77
L 06771	Ľ	LE	1	1 1	12	17S	34E	638338	3636287* 🌑	1426	165	86	79
L 03846 X	L	LE		33	11	17S	34E	636847	3634945* 🌍	1510	200	130	70
L 06894	L	LE	1	4 1	10	17S	34E	635524	3635825* 🌍	1532	175	103	72
L 06766	L	LE	4	1 1	12	17S	34E	638538	3636087* 🔵	1658	160	90	70
L 06752	L	LE	4	4 4	10	17S	34E	636542	3634836* 🌑	1661	170	55	115
L 03846 X2	L	LE		1 1	14	17S	34E	636853	3634543* 🌑	1912	200	90	110
									Avera	ge Depth to	Water:	92 f	eet
										Minimum	Depth:	55 f	eet
										Maximum	Depth:	130 f	eet
Record Count: 12			-									-	

## UTMNAD83 Radius Search (in meters):

Easting (X): 636921

Northing (Y): 3636454

Radius: 2000

\*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.

**APPENDIX III** 

## **INITIAL C-141**

## 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 October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

## **Release Notification and Corrective Action**

	OPERATOR	$\boxtimes$	Initial Report	Final Report
Name of Company : LIME ROCK RESOURCES II-A, LP	Contact : Mike Barrett			
Address : 1111 Bagby Street Suite 4600, Houston ,TX 77002	Telephone No. : 575-365-9724			
Facility Name : North Vacuum Abo North Unit #82 (NVANU #82)	Facility Type: Battery			 _

Surface Owner : State	Mineral Owner:	Lease No. 30-025-32693
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## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
Р	2	17S	34E					

Latitude <u>32.857914 N</u> Longitude <u>-103.5242233 W</u>

## NATURE OF RELEASE

Type of Release : Unknown	Volume of Release : Unknown	Volume R	ecovered: Unknown					
Source of Release : Unknown	Date and Hour of Occurrence: Date and Hour of Discovery:							
	Unknown							
Was Immediate Notice Given?	If YES, To Whom?							
Yes No Not Required								
By Whom? Amber Groves	Date and Hour:							
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.						
🗌 Yes 🖾 No								
If a Watercourse was Impacted, Describe Fully.*								
Describe Cause of Problem and Remedial Action Taken.* Amber Grove		d the NMOC	CD required the impacted					
areas around the old tank battery be delineated to determine the extent of the vertical contamination.								
Describe Area Affected and Cleanup Action Taken.* Lime Rock Resources contacted Talon/LPE to perform initial site assessment and sampling activities in order to generate a work plan.								
I hereby certify that the information given above is true and complete to t	he best of my knowledge and understa	and that pursu	ant to NMOCD rules and					
regulations all operators are required to report and/or file certain release n								
public health or the environment. The acceptance of a C-141 report by th	e NMOCD marked as "Final Report"	does not relie	eve the operator of liability					
should their operations have failed to adequately investigate and remediat								
or the environment. In addition, NMOCD acceptance of a C-141 report of	loes not relieve the operator of respon	sibility for co	mpliance with any other					
federal, state, or local laws and/or regulations.								
	OIL CONSERV	VATION	DIVISION					
Signature: Mul Ban								
	Approved by District Supervisor:							
Printed Name: Michael Barrett								
Title: Production Superintendent	Approval Date:	Expiration D	)ote:					
The. Froudenon Superintendent	Approval Date.	Expiration						
E-mail Address: mbarrett@limerockresources.com	Conditions of Approval:							
	Conditions of Approval,		Attached					
Date: 4/18/2016 Phone: 575-365-9724								

Date: 4/18/2016 Phone: 575 \* Attach Additional Sheets If Necessary

## APPENDIX IV

## LABORATORY RESULTS

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March 24, 2016

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

RE: NVANU #82

Enclosed are the results of analyses for samples received by the laboratory on 03/18/16 12:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. 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 <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accred certif.html.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	03/18/2016	Sampling Date:	03/15/2016
Reported:	03/24/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

## Sample ID: S-1 0' (H600599-01)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/23/2016	ND	2.01	100	2.00	1.37	
Toluene*	<0.050	0.050	03/23/2016	ND	1.91	95.5	2.00	1.66	
Ethylbenzene*	<0.050	0.050	03/23/2016	ND	1.66	83.0	2.00	0.895	
Total Xylenes*	<0.150	0.150	03/23/2016	ND	5.21	86.9	6.00	2.69	
Total BTEX	<0.300	0.300	03/23/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIL 102 % 73.6-140

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1550	16.0	03/21/2016	ND	432	108	400	11.8	
TPH 8015M	TPH 8015M mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	03/22/2016	ND	199	99.4	200	1.20	
DRO >C10-C28	<50.0	50.0	03/22/2016	ND	182	91.2	200	8.62	
Surrogate: 1-Chlorooctane	73.9	% 35-147	7						

Surrogate: 1-Chlorooctadecane 88.3 % 28-171

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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Celey D. Keine



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

Received:	03/18/2016	Sampling Date:	03/15/2016
Reported:	03/24/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

## Sample ID: S-1 0.5' (H600599-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS				+	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/23/2016	ND	2.01	100	2.00	1.37	
Toluene*	<0.050	0.050	03/23/2016	ND	1.91	95.5	2.00	1.66	
Ethylbenzene*	<0.050	0.050	03/23/2016	ND	1.66	83.0	2.00	0.895	
Total Xylenes*	<0.150	0.150	03/23/2016	ND	5.21	86.9	6.00	2.69	
Total BTEX	<0.300	0.300	03/23/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	97.9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1490	16.0	03/21/2016	ND	416	104	400	8.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					2
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	03/22/2016	ND	199	99.4	200	1.20	
DRO >C10-C28	68.2	50.0	03/22/2016	ND	182	91.2	200	8.62	
Surrogate: 1-Chlorooctane	85.9	% 35-147	,						
Surrogate: 1-Chlorooctadecane	110 9	6 28-171							

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#### \*=Accredited Analyte

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

Received:	03/18/2016	Sampling Date:	03/15/2016
Reported:	03/24/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

### Sample ID: S-2 0' (H600599-03)

. . . . . . .

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/23/2016	ND	2.01	100	2.00	1.37	
Toluene*	<0.050	0.050	03/23/2016	ND	1.91	95.5	2.00	1.66	
Ethylbenzene*	<0.050	0.050	03/23/2016	ND	1.66	83.0	2.00	0.895	
Total Xylenes*	<0.150	0.150	03/23/2016	ND	5.21	86.9	6.00	2.69	
Total BTEX	<0.300	0.300	03/23/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIL 98.7 % 73.6-140

Chloride, SM4500CI-B	mg,	mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4560	16.0	03/21/2016	ND	432	108	400	11.8	
TPH 8015M		g/kg Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	23.0	10.0	03/22/2016	ND	199	99.4	200	1.20	
DRO >C10-C28	207	10.0	03/22/2016	ND	182	91.2	200	8.62	
Surrogate: 1-Chlorooctane	100	% 35-147	;						

Surrogate: 1-Chlorooctadecane 125 % 28-171

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

Received:	03/18/2016	Sampling Date:	03/15/2016
Reported:	03/24/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

## Sample ID: S-2 0.5' (H600599-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/23/2016	ND	2.01	100	2.00	1.37	
Toluene*	<0.050	0.050	03/23/2016	ND	1.91	95.5	2.00	1.66	
Ethylbenzene*	<0.050	0.050	03/23/2016	ND	1.66	83.0	2.00	0.895	
Total Xylenes*	<0.150	0.150	03/23/2016	ND	5.21	86.9	6.00	2.69	
Total BTEX	<0.300	0.300	03/23/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	74.0 \$	% 73.6-14	0						
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2760	16.0	03/21/2016	ND	416	104	400	8.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/22/2016	ND	199	99.4	200	1.20	
DRO >C10-C28	379	10.0	03/22/2016	ND	182	91.2	200	8.62	
Surrogate: 1-Chlorooctane	86.8 5	% 35-147	,						

Surrogate: 1-Chlorooctadecane 105 % 28-171

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#### \*=Accredited Analyte

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

Received:	03/18/2016	Sampling Date:	03/15/2016
Reported:	03/24/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

## Sample ID: S-3 0' (H600599-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/24/2016	ND	2.01	100	2.00	1.37	
Toluene*	<0.050	0.050	03/24/2016	ND	1.91	95.5	2.00	1.66	
Ethylbenzene*	<0.050	0.050	03/24/2016	ND	1.66	83.0	2.00	0.895	
Total Xylenes*	<0.150	0.150	03/24/2016	ND	5.21	86.9	6.00	2.69	
Total BTEX	<0.300	0.300	03/24/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	97.1 9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	03/21/2016	ND	416	104	400	8.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<200	200	03/22/2016	ND	199	99.4	200	1.20	
DR0 >C10-C28	22200	200	03/22/2016	ND	182	91.2	200	8.62	
Surrogate: 1-Chlorooctane	94.6	% 35-147	7						
			2						

#### **Cardinal Laboratories**

Surrogate: 1-Chlorooctadecane

#### \*=Accredited Analyte

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Celleg Di Keine

1600 %

28-171



## **Notes and Definitions**

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside if QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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 SM4500CI-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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#### \*=Accredited Analyte

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Celeg Di Keine

cannot accept verbal changes. Please fax writte	Sampler - UPS - Bus - Other:	201	ANNO DEL: CAMIL	Relinguished By: Date 14/16 Received By:		Relinquished By: Date: Date: A Received By:	atifiates or successors atlaing out of or related to the performance of services hereunder by Cardinal, regardless of whether such da	PLEASE NOTE: Lipbility and panages. Cardinals aloway was versues a subserver was a subserver and the second by Cardinal within 30 days after completion of the applicable analyses. All claims including those for nogligance and any other cause whatboever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable analyses. All claims including those for nogligance and any other cause whatboever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable analyses. All claims including those for nogligance and any other cause whatboever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable analyses.	and a state of the				1 1	-2 0'	ê	S-1 0' 61 1	# ( GF W/ SC OI	i)RAE CON ROU ASTE	TAINE NDW/	ATER	Sampler Name: D-ADKWS	n:	Project Name: NV ANW + 82	Project #: Tol 307. 077.01 Project Owner: Lune Rode	¥835 Fax #:	city: Artesia State: NM Zip: 88210	Address: 409 W. TX AVE	Project Manager: DAV W ADKINS	Company Name: TALON / LPE	101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476
to 505-393-2476	0	dition CHECKECEY:	6	N ISAN	REMARKS:	Fax Result:	t: Ves No	and received by Cardinal within 30 days after completion of the applicable na, less of use, or loss of profits incurred by client, its subsidiaries,	ract or forts shall be limited to the amount paid by the client for the			1 3/15/16 / / /	3/15/16 111	1 3/15/16 1 1	13/15/16	13/15/16 111			R: BASE: COOL R:		X	Phone #:	State: Zip:	City:	Address:	Attn:	Company: THUN /LPE	P.O. # 701 307.077.01	BILL TO ANALYSIS REQUEST	

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 8 of 8

Laboratories



April 13, 2016

DAVID ADKINS TALON LPE 408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: NVANU #82

Enclosed are the results of analyses for samples received by the laboratory on 04/07/16 12:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. 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 <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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,

Celeg D. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	04/07/2016	Sampling Date:	04/05/2016
Reported:	04/13/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	LEA CTY.		

## Sample ID: S-1 1' (H600753-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/08/2016	ND	1.97	98.5	2.00	1.73	
Toluene*	<0.050	0.050	04/08/2016	ND	1.86	92.8	2.00	3.49	
Ethylbenzene*	<0.050	0.050	04/08/2016	ND	1.64	82.2	2.00	4.52	
Total Xylenes*	<0.150	0.150	04/08/2016	ND	5.09	84.9	6.00	4.15	
Total BTEX	<0.300	0.300	04/08/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	105 9	6 73.6-14	0						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2240	16.0	04/12/2016	ND	416	104	400	3.77	QM-07
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/08/2016	ND	164	82.0	200	17.7	
DRO >C10-C28	<10.0	10.0	04/08/2016	ND	166	83.0	200	6.94	
Surrogate: 1-Chlorooctane	76.1	% 35-147	7						

Surrogate: 1-Chlorooctadecane 98.9 % 28-171

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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Celeg D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

Received:	04/07/2016	Sampling Date:	04/05/2016
Reported:	04/13/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	LEA CTY.		

## Sample ID: S-1 2' REFUSAL (H600753-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/08/2016	ND	1.97	98.5	2.00	1.73	
Toluene*	0.111	0.050	04/08/2016	ND	1.86	92.8	2.00	3.49	
Ethylbenzene*	0.100	0.050	04/08/2016	ND	1.64	82.2	2.00	4.52	
Total Xylenes*	<0.150	0.150	04/08/2016	ND	5.09	84.9	6.00	4.15	
Total BTEX	<0.300	0.300	04/08/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	104 9	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	880	16.0	04/12/2016	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/08/2016	ND	164	82.0	200	17.7	
DRO >C10-C28	<10.0	10.0	04/08/2016	ND	166	83.0	200	6.94	
Surrogate: 1-Chlorooctane	71.0	% 35-147	7						
Surrogate: 1-Chlorooctadecane	88.3	% 28-171	,						

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Received:	04/07/2016	Sampling Date:	04/05/2016
Reported:	04/13/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	LEA CTY.		

## Sample ID: S-2 1' (H600753-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/08/2016	ND	1.97	98.5	2.00	1.73	
Toluene*	0.196	0.050	04/08/2016	ND	1.86	92.8	2.00	3.49	
Ethylbenzene*	0.266	0.050	04/08/2016	ND	1.64	82.2	2.00	4.52	
Total Xylenes*	0.419	0.150	04/08/2016	ND	5.09	84.9	6.00	4.15	
Total BTEX	0.882	0.300	04/08/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	104 9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7360	16.0	04/12/2016	ND	416	104	400	3.77	
TPH 8015M	mg/	′kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/08/2016	ND	164	82.0	200	17.7	
DRO >C10-C28	300	10.0	04/08/2016	ND	166	83.0	200	6.94	
Surrogate: 1-Chlorooctane	106	% 35-147	7						
Surrogate: 1-Chlorooctadecane	119 5	% 28-171							

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



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Received:	04/07/2016	Sampling Date:	04/05/2016
Reported:	04/13/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	LEA CTY.		

## Sample ID: S-2 2' REFUSAL (H600753-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/08/2016	ND	1.97	98.5	2.00	1.73	
Toluene*	0.444	0.050	04/08/2016	ND	1.86	92.8	2.00	3.49	
Ethylbenzene*	0.953	0.050	04/08/2016	ND	1.64	82.2	2.00	4.52	
Total Xylenes*	2.08	0.150	04/08/2016	ND	5.09	84.9	6.00	4.15	
Total BTEX	3,48	0.300	04/08/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	128 9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	′kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5040	16.0	04/12/2016	ND	416	104	400	3.77	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	52.2	10.0	04/08/2016	ND	164	82.0	200	17.7	
DRO >C10-C28	2730	10.0	04/08/2016	ND	166	83.0	200	6.94	
Surrogate: 1-Chlorooctane	104	% 35-147	7						
Surrogate: 1-Chlorooctadecane	147	% 28-17	1						

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Received:	04/07/2016	Sampling Date:	04/05/2016
Reported: Project Name:	04/13/2016 NVANU #82	Sampling Type: Sampling Condition:	Soil Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	LEA CTY.	designed in the information states in the	

## Sample ID: S-3 1' REFUSAL (H600753-05)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	3.55	2.00	04/13/2016	ND	1.97	98.5	2.00	1.73	
Toluene*	65.7	2.00	04/13/2016	ND	1.86	92.8	2.00	3.49	
Ethylbenzene*	101	2.00	04/13/2016	ND	1.64	82.2	2.00	4.52	
Total Xylenes*	118	6.00	04/13/2016	ND	5.09	84.9	6.00	4.15	
Total BTEX	287	12.0	04/13/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	119	% 73.6-14	0						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	04/12/2016	ND	416	104	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	708	10.0	04/08/2016	ND	164	82.0	200	17.7	
DRO >C10-C28	1960	10.0	04/08/2016	ND	166	83.0	200	6.94	
Surrogate: 1-Chlorooctane	127	% 35-147	7	_					
Surrogate: 1-Chlorooctadecane	120	% 28-171							

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Celeg D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

Received:	04/07/2016	Sampling Date:	04/05/2016
Reported:	04/13/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	LEA CTY.		

## Sample ID: S-4 0.25' (H600753-06)

BTEX 8021B	mg/	kg	Analyze	d By: MS		_			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/08/2016	ND	1.97	98.5	2.00	1.73	
Toluene*	0.182	0.050	04/08/2016	ND	1.86	92.8	2.00	3.49	
Ethylbenzene*	0.254	0.050	04/08/2016	ND	1.64	82.2	2.00	4.52	
Total Xylenes*	0.321	0.150	04/08/2016	ND	5.09	84.9	6.00	4.15	
Total BTEX	0.758	0.300	04/08/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3280	16.0	04/12/2016	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/08/2016	ND	164	82.0	200	17.7	

ND

166

83.0

200

6.94

04/08/2016

Surrogate: 1-Chlorooctane	79.3 %	35-147
Surrogate: 1-Chlorooctadecane	92.6%	28-171

10.9

10.0

### **Cardinal Laboratories**

DRO >C10-C28

#### \*=Accredited Analyte

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 7 of 9



#### **Notes and Definitions**

- S-06
   The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.

   QR-02
   The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

   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 SM4500CI-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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#### \*=Accredited Analyte

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Celeg Di Keine

Celey D. Keene, Lab Director/Quality Manager

Time:2:05     UU       By: (Circle One)     Time:2:05       S< - Bus - Other:     4.2%       rai cannot accept verbal changes. Please fax writte	Relinguished By: Date 11 Received By:	PLEASE NOTE: Liability and Damages. Cardinal's liability and eliant's exclusive numeries (see not services) and the second which and th		6 S=# 0.23	3 1	Refusal	0 1 2 10000	1		(G)RAB OR (C)OMP CONTAINERS GROUNDWATER WASTEWATER SOIL		Sampler Name: King Wilson	1 CH	111 H Q A	010-040-040 DI	はSIG FAR 9788 Far持 575-7		N. Texas Ave.		Company Name: Talon/LPE	101 East Mariand, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476		
Sample Condition CHECKED BY: Cool Intact Pres Yes (Mittais) No No No In changes to (575) 393-2326	□Yes □ No	] Yes	s constants a constant sector shall be indicating the sector sect		V V /1/2 / 7 / 10:11	10.57	1 1 10:55 1 1 1	1 1 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	-	OIL SLUDGE OTHER: ACID/BASE: ICE/GOOL OTHER: DATEX BTEX	PRESERV.	Fax #: IDDECERPT SAMPLING	Phone #	State: Zip:	City:	Address:	Attn:	Company: 1 21011/LTC	1		ANALYSIS REQUEST	CHAIN-OF-CUSTODY AND ANALYSIS REQUEST	

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April 20, 2016

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

RE: NVANU #82

Enclosed are the results of analyses for samples received by the laboratory on 04/15/16 11:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited certif.html.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received: 0	4/15/2016	Sampling Date:	04/12/2016
Reported: 0	4/20/2016	Sampling Type:	Soil
Project Name: N	IVANU #82	Sampling Condition:	Cool & Intact
Project Number: 7	01307.077.01	Sample Received By:	Celey D. Keene
Project Location: L	EA CTY.		

## Sample ID: B-1 5' (H600824-01)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1730	16.0	04/18/2016	ND	416	104	400	0.00	

## Sample ID: B-1 10' (H600824-02)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1840	16.0	04/18/2016	ND	416	104	400	0.00	

#### Sample ID: B-1 15' (H600824-03)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1380	16.0	04/18/2016	ND	416	104	400	0.00	

#### Sample ID: B-1 20' (H600824-04)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	04/18/2016	ND	416	104	400	3.92	

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Received:	04/15/2016	Sampling Date:	04/12/2016
Reported:	04/20/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Celey D. Keene
Project Location:	LEA CTY.		

## Sample ID: B-2 5' (H600824-05)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2960	16.0	04/18/2016	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
DRO >C10-C28	342	10.0	04/15/2016	ND	193	96.7	200	6.92	
Surrogate: 1-Chlorooctane	82.8	% 35-147							
Surrogate: 1-Chlorooctadecane	108	% 28-171							

### Sample ID: B-2 10' (H600824-06)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2440	16.0	04/18/2016	ND	416	104	400	3.92	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
DRO >C10-C28	<10.0	10.0	04/15/2016	ND	193	96.7	200	6.92	
Surrogate: 1-Chlorooctane	82.9	% 35-147							
Surrogate: 1-Chlorooctadecane	89.4	% 28-171							

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Received:	04/15/2016	Sampling Date:	04/12/2016
Reported:	04/20/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Celey D. Keene
Project Location:	LEA CTY.		

## Sample ID: B-2 15' (H600824-07)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2280	16.0	04/18/2016	ND	416	104	400	3.92	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
DRO >C10-C28	<10.0	10.0	04/15/2016	ND	193	96.7	200	6.92	
Surrogate: 1-Chlorooctane	78.6	% 35-147							
Surrogate: 1-Chlorooctadecane	89.9	% 28-171							

### Sample ID: B-2 20' (H600824-08)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2240	16.0	04/18/2016	ND	416	104	400	3.92	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
DRO >C10-C28	<10.0	10.0	04/15/2016	ND	193	96.7	200	6.92	
Surrogate: 1-Chlorooctane	78.6	% 35-147	7						
Surrogate: 1-Chlorooctadecane	88.6	% 28-171	1						

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Received:	04/15/2016	Sampling Date:	04/12/2016
Reported:	04/20/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Celey D. Keene
Project Location:	LEA CTY.		

## Sample ID: B-2 25' (H600824-09)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1230	16.0	04/18/2016	ND	416	104	400	3.92	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
DRO >C10-C28	<10.0	10.0	04/15/2016	ND	193	96.7	200	6.92	
Surrogate: 1-Chlorooctane	77.7	% 35-147							e.
Surrogate: 1-Chlorooctadecane	89.2	% 28-171							

## Sample ID: B-2 30' (H600824-10)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	848	16.0	04/18/2016	ND	416	104	400	3.92	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
DRO >C10-C28	<10.0	10.0	04/15/2016	ND	193	96.7	200	6.92	
Surrogate: 1-Chlorooctane	77.0	% 35-147	,						
Surrogate: 1-Chlorooctadecane	88.8	% 28-171							

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Received:	04/15/2016	Sampling Date:	04/12/2016
Reported:	04/20/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Celey D. Keene
Project Location:	LEA CTY.		

## Sample ID: B-3 5' (H600824-11)

BTEX 8021B	mg/ł	cg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/15/2016	ND	2.06	103	2.00	5.88	
Toluene*	<0.050	0.050	04/15/2016	ND	1.95	97.7	2.00	6.73	
Ethylbenzene*	<0.050	0.050	04/15/2016	ND	1.74	86.9	2.00	6.74	
Total Xylenes*	<0.150	0.150	04/15/2016	ND	5.38	89.6	6.00	6.09	
Total BTEX	<0.300	0.300	04/15/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	106 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/l	٨g	Analyze	d By: AP					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	04/18/2016	ND	416	104	400	3.92	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
DRO >C10-C28	<10.0	10.0	04/15/2016	ND	193	96.7	200	6.92	
Surrogate: 1-Chlorooctane	76.3	% 35-147	7						

Surrogate: 1-Chlorooctadecane 88.6 % 28-171

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Received:	04/15/2016	Sampling Date:	04/12/2016
Reported:	04/20/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Celey D. Keene
Project Location:	LEA CTY.		

## Sample ID: B-3 10' (H600824-12)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/15/2016	ND	2.06	103	2.00	5.88	
Toluene*	<0.050	0.050	04/15/2016	ND	1.95	97.7	2.00	6.73	
Ethylbenzene*	<0.050	0.050	04/15/2016	ND	1.74	86.9	2.00	6.74	
Total Xylenes*	<0.150	0.150	04/15/2016	ND	5.38	89.6	6.00	6.09	
Total BTEX	<0.300	0.300	04/15/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	106 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	04/18/2016	ND	416	104	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
DRO >C10-C28	<10.0	10.0	04/15/2016	ND	193	96.7	200	6.92	
Surrogate: 1-Chlorooctane	80.5	% 35-147	7						
Surrogate: 1-Chlorooctadecane	99.1	28-171							

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Received:	04/15/2016	Sampling Date:	04/12/2016
Reported:	04/20/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Celey D. Keene
Project Location:	LEA CTY.		

## Sample ID: B-3 15' (H600824-13)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/15/2016	ND	2.06	103	2.00	5.88	
Toluene*	<0.050	0.050	04/15/2016	ND	1.95	97.7	2.00	6.73	
Ethylbenzene*	<0.050	0.050	04/15/2016	ND	1.74	86.9	2.00	6.74	
Total Xylenes*	<0.150	0.150	04/15/2016	ND	5.38	89.6	6.00	6.09	
Total BTEX	<0.300	0.300	04/15/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIL 103 % 73.6-140

Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
288	16.0	04/18/2016	ND	416	104	400	3.92	
mg/	/kg	Analyze						
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
<10.0	10.0	04/15/2016	ND	193	96.7	200	6.92	
	288 mg/ Result <10.0	288         16.0           mg/kg           Result         Reporting Limit           <10.0	288         16.0         04/18/2016           mg/kg         Analyze           Result         Reporting Limit         Analyzed           <10.0	288     16.0     04/18/2016     ND       mg/kg     Analyzed By: MS       Result     Reporting Limit     Analyzed       <10.0	288         16.0         04/18/2016         ND         416           mg/kg         Analyzed By: MS         S           Result         Reporting Limit         Analyzed         Method Blank         BS           <10.0	288         16.0         04/18/2016         ND         416         104           mg/kg         Analyzed By: MS         Method Blank         BS         % Recovery           <10.0	288         16.0         04/18/2016         ND         416         104         400           mg/kg         Analyzed By: MS         Keporting Limit         Analyzed         Method Blank         BS         % Recovery         True Value QC           <10.0	288         16.0         04/18/2016         ND         416         104         400         3.92           mg/kg         Analyzed By: MS         S         % Recovery         True Value QC         RPD           <10.0

Surrogate: 1-Chlorooctadecane 101 % 28-171

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16 Sampling 82 Sampling 77.01 Sample F	
	, ,

## Sample ID: B-3 20' (H600824-14)

BTEX 8021B	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/15/2016	ND	2.06	103	2.00	5.88	
Toluene*	<0.050	0.050	04/15/2016	ND	1.95	97.7	2.00	6.73	
Ethylbenzene*	<0.050	0.050	04/15/2016	ND	1.74	86.9	2.00	6.74	
Total Xylenes*	<0.150	0.150	04/15/2016	ND	5.38	89.6	6.00	6.09	
Total BTEX	<0.300	0.300	04/15/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	105 9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	04/18/2016	ND	416	104	400	3.92	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
GRO C6-C10	<10.0	10.0	04/15/2016	ND	182	90.8	200	6.71	
DRO >C10-C28	<10.0	10.0	04/15/2016	ND	193	96.7	200	6.92	

Surrogate: 1-Chlorooctane	88.1 %	35-147
Surrogate: 1-Chlorooctadecane	99.3 %	28-171

## Sample ID: B-4 2' (H600824-15)

Chloride, SM4500CI-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	04/18/2016	ND	416	104	400	3.92	

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	04/15/2016	Sampling Date:	04/12/2016 Soil
Reported: Project Name:	04/20/2016 NVANU #82	Sampling Type: Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Celey D. Keene
Project Location:	LEA CTY.		

## Sample ID: B-4 5' (H600824-16)

Chloride, SM4500CI-B mg/kg			Analyzed By: AP						1.
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	04/18/2016	ND	416	104	400	3.92	

## Sample ID: B-4 10' (H600824-17)

Chloride, SM4500Cl-B	mg	mg/kg		Analyzed By: AP					1
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	04/18/2016	ND	416	104	400	3.92	
Sample ID: B-4 15' (H600	824-18)								
		lka	Analyze	d By: AP					
Chloride, SM4500Cl-B	mg	/kg	Analyze	ed By: AP					-
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

ND

416

104

#### Sample ID: B-4 20' (H600824-19)

Chloride

240

16.0

Chloride, SM4500Cl-B	, SM4500CI-B mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	04/18/2016	ND	416	104	400	3.92	

04/18/2016

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#### \*=Accredited Analyte

3.92

400

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## **Notes and Definitions**

***	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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Laboratories

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

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April 26, 2016

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

RE: NVANU #82

Enclosed are the results of analyses for samples received by the laboratory on 04/21/16 12:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. 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 <a href="https://www.tceq.texas.qov/field/ga/lab">www.tceq.texas.qov/field/ga/lab</a> accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.qov/field/ga/lab">www.tceq.texas.qov/field/ga/lab</a> accredited certif.html.

Cardinal Laboratories is accreditated 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,

Celeg D. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	04/21/2016	Sampling Date:	04/12/2016
Reported:	04/26/2016	Sampling Type:	Soil
Project Name:	NVANU #82	Sampling Condition:	Cool & Intact
Project Number:	701307.077.01	Sample Received By:	Jodi Henson
Project Location:	LEA CTY.		

### Sample ID: B-2 35' (H600872-01)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	04/26/2016	ND	416	104	400	3.92	

## Sample ID: B-2 40' (H600872-02)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	04/26/2016	ND	416	104	400	0.00	

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#### \*=Accredited Analyte

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## **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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