L Peter Galusky, Jr PE

Texerra LLC

May 15th, 2015

Dr. Tomas Oberding

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe, New Mexico 87504

RE: Corrective Action Plan (CAP)

Rice Operating Company – Vacuum SWD System Vacuum Jct. A-36: UL A, Sec. 36, T17S, R34E

NMOCD Case Number: 1R425-83

Sent via Email

Dr. Oberding:

RICE Operating Company (ROC) has retained Texerra to address potential environmental concerns at the above-referenced site in the abandoned Vacuum Salt Water Disposal (SWD) system. This report summarizes investigative work done to date to determine the lateral and vertical extent of residual soil chlorides and hydrocarbons and presents a Corrective Action Plan (CAP) to ensure that groundwater quality is protected.

Background and Previous Work

This site is located approximately ¼ mile SSE of Buckeye, New Mexico in UL A, Sec. 36, T17S, R34E as shown on the Site Location Map (Figure 1). Soil bore installation indicated groundwater is located at a depth of approximately 102 +/- feet.

In 2009, ROC initiated work on the former Vacuum A-36 junction box as part of the system abandonment. The former junction box and surrounding soil was removed from an excavation of approximately dimensions 10 ft by 10 ft by 12 ft deep. Soils samples were field analyzed at regular intervals for chloride and hydrocarbon. The 12 ft sample 5 ft west, east, north and south of the source were analyzed by a commercial laboratory. Residual soil hydrocarbons were below detectable limits for all these samples. However, elevated residual soil chlorides (ranging from 672 to 3,200 mg/kg) were found in these bottom lateral samples. The excavated soil was blended (testing 47.7 mg/kg TPH and 2,200 mg/kg chloride) and returned to the excavation. A 1 ft thick compacted clay barrier was installed from 4 to 5 ft bgs. Clean, imported soil was installed above the clay barrier and the surface was returned to the natural contour and seeded. NMOCD was notified of potential groundwater impact on March 12th, 2010 and a Junction Box Disclosure Report was submitted with all the 2009 junction box closures and disclosures.

Vacuum Jct. A-36

ROC initiated soil sampling and analysis as indicated in our Investigation and Characterization Plan (ICP) of February 15th, 2013. As part of the ICP, personnel were on site May 7th to conduct soil bore installations. One soil bore was installed at the closest possible distance, 30 feet north of the source, due to safety concerns. There are numerous safety hazards surrounding this site, including overhead power lines directly over the source and underground non-ROC pipelines. The overhead power line in combination with the non-ROC pipeline prevented a bore from being drilled south or east of the site. ROC was required to remain at least 30 ft away from the overhead power line as well as a safe distance away from the non-ROC line (at least 10 ft). As the bore was advanced, samples were field tested for chlorides and hydrocarbons. Representative samples from the bore were taken to a commercial laboratory for analysis of chlorides and hydrocarbons. SB-1 returned laboratory chloride readings of 3,280 mg/kg at 30 ft bgs and decreased to 1,180 mg/kg at 95 ft bgs. GRO and DRO results were non-detect throughout the bore (Figure 2). The soil bore was plugged with bentonite to the ground surface.

Texerra submitted an ICP Report to OCD on June 3rd, 2013 which summarized soil characterization work done to date. ROC has since (in July and November 2014) drilled and sampled soils from two additional soil bores within the study area. As the bores were advanced, samples were field tested for chlorides and hydrocarbons. Representative samples from each bore were taken to a commercial laboratory for analysis of chlorides and hydrocarbons. SB-2 returned laboratory chloride readings of 64 mg/kg at the surface, 1,180 mg/kg at 25 ft bgs, which decreased to 80 mg/kg at 50 ft bgs. SB-3 returned laboratory chloride readings of 2,680 mg/kg at 15 ft bgs and 944 mg/kg at 95 ft bgs. GRO and DRO results were non-detect throughout each bore. The soil bores were plugged with bentonite to the ground surface. This data is summarized in the attached Soil Bore and Vertical Data plat (Figure 2) and the attached soil bore logs (Appendix).

Three verticals were excavated on March 24th, 2014. The 15 ft north vertical returned laboratory chloride readings below 250 mg/kg to a depth of 3 ft bgs. GRO and DRO results were non-detect. The 15 ft east vertical returned a laboratory chloride reading of 5,920 mg/kg at the surface, 3,440 mg/kg at 2 ft bgs, and 1,840 mg/kg at 8 ft bgs. GRO laboratory readings resulted in 286 mg/kg at the surface, non-detect at 2 ft bgs, and 198 mg/kg at 8 ft bgs. DRO laboratory readings were below detectable limit. The 15 ft south vertical returned a laboratory chloride reading of 240 mg/kg at the surface, 1,470 mg/kg at 1 ft bgs, 528 mg/kg at 2 ft bgs, and 416 mg/kg at 3 ft bgs. GRO laboratory readings resulted in 300 mg/kg at 1 ft bgs, 15.1 mg/kg at 2 ft, and non-detect at the surface and 3 ft bgs. These verticals could not be excavated any deeper due to the presence of hard rock. A surface sample was collected to the west of the former junction box, resulting in a laboratory chloride, GRO, and DRO readings below detectable limits. To further delineate the area to the west, an additional vertical was excavated on March 22nd, 2015, resulting in laboratory chloride reading below detectable limit in the surface, 512 mg/kg at 1 ft bgs, and 80 mg/kg at 2 ft bgs. GRO and DRO results were non-detect throughout this vertical. This data is summarized in Figure 2.

The area of elevated residual soil chlorides is encompassed and delineated by the proposed subsurface liner (blue box) having modified dimensions of 70 by 42 ft. ROC proposes to excavate soil within this area to a depth of approximately 3.5 ft bgs due to presence of hard rock in the area, add and level approximately 6 inches of clean blow sand, carefully install and seat a 20 mil

Vacuum Jct. A-36

synthetic liner, carefully add 6 inches of clean blow sand over top of the liner, return the native soil and grade to original contours. The soils placed above the liner will have a laboratory chloride reading no greater than 500 mg/kg and a field PID measurement below 100 ppm. Excavated soils will be evaluated for use as backfill and any soils that do not meet requirements will be properly disposed of at a NMOCD approved facility. ROC will then prepare the soil and reseed with a native seed mixture.

ROC also proposes to install an up-gradient and a near-source monitor well approximately as shown in the attached plat. These will provide a means to assess current and future groundwater quality. Additional monitoring wells may be required to fully delineate groundwater quality.

ROC is the service provider (agent) for the Vacuum SWD System and has no ownership of any portion of the pipeline, well, or facility. The system is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage/usage basis.

Please contact either myself or Katie Jones Davis with ROC if you have any questions or need additional information.

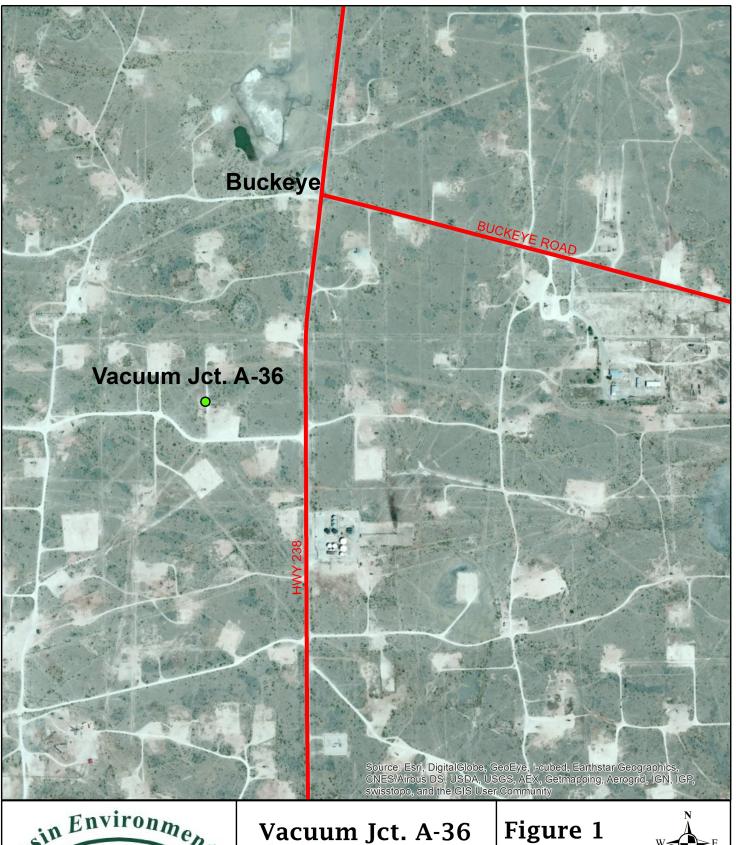
Thank you.

Sincerely,

L. Peter Galusky, Jr. P.E. NM Prof. Engineer No. 22561

Copy: Rice Operating Company

Attachments: as noted

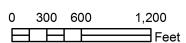




Unit A, Section 36, T17S, R34E

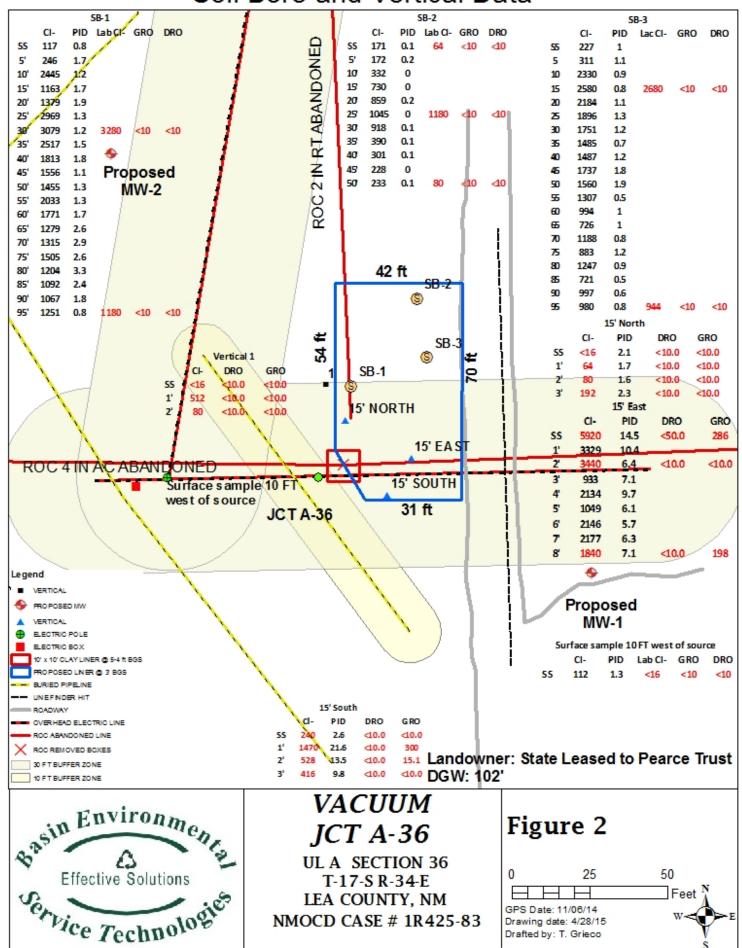
NMOCD Case #: 1R425-83





Drawing date: 2-8-13

Soil Bore and Vertical Data



M. Logger: Kyle Norman SB-1 Driller: Harrison & Cooper, Inc. Drilling Method: Air Rotary **Project Name:** Well ID: Start Date: 5/7/2013 Vacuum Jct. A-36 SB-1 End Date: 5/7/2013 Project Consultant: Texerra Comments: SB-1 is located 30 ft north of the former junction box site. Location: UL A, Sec. 36, T17S, R34E All samples were from cuttings. Lat: 32°47'50.911"N County: Lea DRAFTED BY: L. Peña GW = 102 ft State: NM TD = 95 ftLong: 103°30'29.693"W Field LAB PID **Well Construction** Depth **TPH** Description Lithology CI CI (mg/kg) (mg/kg) (mg/kg) (ppm) SS 117 8.0 **Brown Sand Caliche Mix** 5 ft 1.7 246 Clay With Caliche Damp 10 ft 2,445 1.2 Caliche 15 ft 1,163 1.7 Caliche With Some Sandstone 20 ft 1.9 1,379 25 ft 2,969 1.3 3,280 30 ft 3,079 DRO <10 1.2 Red/Tan Sand 35 ft 2,517 1.5 40 ft 1,813 1.8

						1		
45 ft	1,556			1.1				
	1,000							
					Red/Tan Sand			bentonite
								seal
50 ft	1,455			1.3				
]		
55 ft	2,033			1.3				
					Tan Sand			
60 ft	1,771			1.7		1		
33 11	1,771							
65 ft	1,279			2.6				
05 11	1,279			2.0				
					Moist Red Sand			
70 ft	1,315			2.9				
75 ft	1,505			2.6		1		
7010	1,000			2.0	Moist Red Sand With Some			
					Sandstone			
						1		
80 ft	1,204			3.3				
85 ft	1,092			2.4				
0011	1,032			۷.4				
					Moist Red Sand			
90 ft	1,067			1.8				
05.5	4.054	4.400	GRO <10	0.0				
95 ft	1,251	1,180	DRO <10	0.8				J

Logger:	Amber Groves	SB-2 ⑤				
Driller:	Harrison&Cooper Inc.	SB-1	REC	And the Control of th		
Drilling Method:	Air Rotary		Project Name:	Well ID:		
Start Date:	7/18/2014	——×	Vacuum Jct. A-36	SB-2		
End Date:	7/18/2014	JCT A-36	Project Consultant: RE	ECS .		
	samples were taker	Location: UL/A Sec. 3	36			
ins	stalled 60' northeast	of the former junction box.	T-17-S R-34-E			

DRAFTED BY: C. Uršanić TD = 50'GW = 102'

T-17-S R-34-E											
Lat: 32°47'51.232"N	County:Lea										
Long:103°30'29.402"W	State:NM										

SB-2

TD = 50'			_	GW = 102'	Long:103°30'29.402"W State:NM				
Depth (feet)	Chloride field tests	LAB	PID	Description		Lithology	W	ell Co	nstruction
SS	171	CI- 64	0.1						
		GRO <10		Brown Sand					
		DRO <10							
5 ft	172		0.2						
				Caliche					
10 ft	332		0	Tan Sand/Caliche					
15 ft	730		0						
				Tan Sand/Caliche/Sandstone					Bentonite
20 ft	859		0.2						Seal
		CI-							
25 ft	1045	1180 GRO	0						
		<10 DRO <10		Top cond					
30 ft	918		0.1	Tan sand					
35 ft	390		0.1						
			<u> </u>						
									<u> </u>

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
40 ft	301		0.1			
45 ft	228		0			
				Tan sand		Bentonite
						Seal
50 ft	233	CI- 80	0.1			
		GRO <10				
		DRO <10				

Logger:

Amber Groves

Harrison & Cooper Inc.

Drilling Method:

Air Rotary

Start Date:

11/6/2014

End Date:

Amber Groves

SB-2

SB-3

SB-3

SB-1



Company: ROC

Project Name:

Well ID:

Vacuum Jct. A-36

Project Consultant: Texerra Location: UL/ A Sec.36

T17S R34E

Lat: 32.797511

Long: -103.508157

County: Lea State: NM

SB-3

Comments: All samples taken from cuttings. SB-3 is located 44 FT

northeast of the source. DRAFTED BY: Brian Cooper

TD = 95 FT GW = 102 FT

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	227		1	Brown topsoil		
				2.6 6.666		
5 ft	311		1.1			
10 ft	2330		0.9			
				Tan sand with sandstone		
15 ft	2580	CI- 2680	0.8			
		GRO <10 DRO				Bentonite
		<10				Seai
20 ft	2184		1.1	Tan sand with caliche		
				Tan Gana Wan Ganerie		
25 ft	1896		1.3			
30 ft	1751		1.2	Brownish tan sand with caliche		

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
35 ft	1485		0.7			
40 ft	1487		1.2			
45 ft	1737		1.8	Brownish tan sand with sandstone		
50 ft	1560		1.9			
55 ft	1307		0.5			
60 ft	994		1			Seal
65 ft	726		1			
70 ft	1188		0.8	Brown sand		
75 ft	883		1.2			
80 ft	1247		0.9			

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
85 ft	721		0.5			
90 ft	997		0.6	Brown sand		Bentonite
95 ft	980	CI- 944 GRO	0.8			Seal
		<10 DRO <10				



May 09, 2013

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JCT. A-36 17S/34E

Enclosed are the results of analyses for samples received by the laboratory on 05/07/13 16:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab 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.

Celey D. Keene

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



Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 05/07/2013 Sampling Date: 05/07/2013

Reported: 05/09/2013 Sampling Type: Soil

Project Name: VACUUM JCT. A-36 17S/34E Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Project Location: NOT GIVEN

Sample ID: SB 1 @ 30' (H301085-01)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3280	16.0	05/08/2013	ND	432	108	400	3.77	
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	05/08/2013	ND	201	101	200	1.94	
DRO >C10-C28	<10.0	10.0	05/08/2013	ND	198	98.8	200	2.58	
Surrogate: 1-Chlorooctane 98.0 % 65.2-1		% 65.2-14	10						
Surrogate: 1-Chlorooctadecane	102	% 63.6-15	54						

Sample ID: SB 1 @ 95' (H301085-02)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1180	16.0	05/08/2013	ND	432	108	400	3.77	
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	05/08/2013	ND	201	101	200	1.94	
DRO >C10-C28	<10.0	10.0	05/08/2013	ND	198	98.8	200	2.58	
Surrogate: 1-Chlorooctane	105	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	114 5	% 63.6-15	4						

Cardinal Laboratories *=Accredited Analyte

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Celey D. Keine



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

Cardinal Laboratories *=Accredited Analyte

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Celey D. Keene

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

RDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: Rice	BILL TO ANALYSIS REQUEST					
Project Manager: Hack Conder	P.O. #:					
Address:	Company:					
City: Hobbs State: NM Zip: 88240	Attn:	<u> </u>				
Phone #: Fax #:	Address:					
Project #: Project Owner:	City:					
Project Name:	State: Zip:	Chlorides TPH 8015 N BTEX Texas TPH TDS TDS				
Project Location: Vacuum Joss 436 175-34E	Phone #:	H 8016 BTEX Axas TI Catio				
Sampler Name: Kyle Norman	Fax #:					
Lab I.D. Sample I.D. Sample	V, 5-7-3 1,00 11 2;5	Comple				
PLEASE NOTE; Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in country analyses. All claims including those for negligence and any other cause whatsoever shall be deemed walved unless made in writing a service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruption affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such clair Relinquished By: Date: Time: Tim	nd received by Cardinal within 30 days after completion of s, loss of use, or loss of profits incurred by client, its subsidi	the applicable aries isc. esuit: □ Yes ☑ No Add'I Phone #: it: □ Yes ☑ No Add'I Fax #:				
Relinquished By: Date: Received By: Time: Delivered By: (Circle One) Sample Cond Cool Infact Sampler - UPS - Bus - Other:	email Knorr Kjone	results: zconder@rice-ecs.com man@rice-ecs.com; lpena@riceswd.com es@riceswd.com; Bbaker@rice-ecs.com; der@rice-ecs.com; Lweinheimer@rice-ecs.com				

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393 2476

RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240 PHONE: (505) 393-9174 FAX: (505) 397-1471 PID METER CALIBRATION & FIELD REPORT FORM

CK.		MODEL: PGM 7300	SERIAL NO: 590-00050
MODEL	X	MODEL: PGM 7300	SERIAL NO: 590-00050
NO.		MODEL: PGM 7320	SERIAL NO: 592-90331
		MODEL: PGM 7300	SERIAL NO: 590-00018

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO : HAL-248-100-1	EXPIRATION DATE: 7/01/2015
METER READING AC	CCURACY: 99.9 PPM

ACCURACY: +/- 2%

COMPANY

SITE	UNIT	SECTION	TOWN SHIP	RANGE
Vacuum Jct. A-36	A	36	T-17-S	R-34-E

SAMPLE ID	PID	SAMPLE ID	PID
Soil Bore #1 @ Surface	0.8	Soil Bore #1 @ 60'	1.7
Soil Bore #1 @ 5'	1.7	Soil Bore #1 @ 65'	2.6
Soil Bore #1 @ 10'	1.2	Soil Bore #1 @ 70'	2.9
Soil Bore #1 @ 15'	1.7	Soil Bore #1 @ 75'	2.6
Soil Bore #1 @ 20'	1.9	Soil Bore #1 @ 80'	3.3
Soil Bore #1 @ 25'	1.3	Soil Bore #1 @ 85'	2.4
Soil Bore #1 @ 30'	1.2	Soil Bore #1 @, 90'	1.8
Soil Bore #1 @ 35'	1.5	Soil Bore #1 @ 95'	0.8
Soil Bore #1 @ 40'	1.8		
Soil Bore #1 @ 45'	1.1		
Soil Bore #1 @ 50'	1.3		
Soil Bore #1 @ 55'	1.3		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE: Kylo Na

DATE: 5-7-2013



July 23, 2014

KYLE NORMAN

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JCT A-36

Enclosed are the results of analyses for samples received by the laboratory on 07/18/14 12:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab accredited certif.html.

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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.

Celey D. Keene

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



Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 07/18/2014

Reported: 07/23/2014

Project Name: VACUUM JCT A-36
Project Number: NONE GIVEN
Project Location: T-17S R-36E

Sampling Date: 07/18/2014

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SB 2 @ SURFACE (H402195-01)

Chloride, SM4500CI-B	mg	mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/22/2014	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	07/19/2014	ND	174	86.9	200	5.90	
DRO >C10-C28	<10.0	10.0	07/19/2014	ND	187	93.5	200	6.11	
Surrogate: 1-Chlorooctane	108	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	116	% 63.6-15	4						

Sample ID: SB 2 @ 25' (H402195-02)

Chloride, SM4500Cl-B	mg,	mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1180	16.0	07/22/2014	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	07/19/2014	ND	174	86.9	200	5.90	
DRO >C10-C28	<10.0	10.0	07/19/2014	ND	187	93.5	200	6.11	
Surrogate: 1-Chlorooctane	107	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	111 9	% 63.6-15	4						

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Celey D. Keine



Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 07/18/2014

Reported: 07/23/2014

Project Name: VACUUM JCT A-36
Project Number: NONE GIVEN
Project Location: T-17S R-36E

Sampling Date: 07/18/2014

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SB 2 @ 50' (H402195-03)

Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/22/2014	ND	416	104	400	3.77	
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	07/19/2014	ND	174	86.9	200	5.90	
DRO >C10-C28	<10.0	10.0	07/19/2014	ND	187	93.5	200	6.11	
Surrogate: 1-Chlorooctane	108 9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	118 9	% 63.6-15	4						

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any daim 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. Keine



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

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any daim 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

RDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020 Company Name: 216

Project Manage	Project Manager: Kyle Normow							P.O. #:			T							T	T		T		
Address:							- S	Cor	npa	ny:			1				S						
City: Hobbs	State: NM	Zip	p: 88	3240)			Attn:							on								
Phone #:	Fax #:							Address:							Ę.								
Project #:	Project Owne	r:						City	/ :				1	Σ		-	Y A						
Project Name: \	Project Name: Vacuum Uct. A-36						Stat	te:		Zip:		es			直	ST.							
Project Location								Pho	ne :	#:			I	8015	BTEX	Texas TPH	Catic	S					
Sampler Name:	Amber Groves							Fax	#:				Chlorides	8				1					
FOR LAB USE ONLY		1.			MA	TRIX	(PRE	SERV	SAMP	ING	Ö	TPH		G,	e						
Lab I.D.	Sample I.D.	A(G)RAB OR (C)OMP	# CONTAINE	GROUNDWATER	WASTEWATER	OIL	SLUDGE	OTHER:		OTHER:	DATE	TIME				T	Complete Cations/Anions						
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PLEASE NOTE: Liability an	d Damanee Cardinal's liability and client's evaluates remarks for		Ш	Щ				\perp															
service. In no event shall Ca	d Damages. Cardinal's liability and client's exclusive remedy for a g those for negligence and any other cause whatsoever shall be ardinal be liable for incidental or consequental damages, including g out of or related to the performance of services hereunder by C	deemed withou	d waive	ed unless	s made in	n writing	ig and re	eceive	d by C	ardinal	within 30 days at	ter completion of t	he applicat	ble									
Relinquished By	Date: 18-14	Re	geiv	ed B	y:		U	Dusco	орон	ally of th	ie above stateu i	Phone Re	sult:	□ Ye				hone #	t:			_	
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Refinquished By	Date: Received By: Time: Delivered By: (Circle One) Sample Condi										email re Knorma Kjones	an@ri @rice	swd.d	com; jl	kampl	lain@)rice-e	ecs.c	om				
Sampler - UPS				C	ool Yes	Intac	ct	n	С		(FD BY: ijals)	hconde sedwar	hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; sedwards@rice-ecs.com; lflores@rice-ecs.com; agroves@rice-ecs.com					.com					
					No	Ħ	No		1	V	M												

BILL TO

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240 PHONE: (505) 393-9174 FAX: (505) 397-1471 PID METER CALIBRATION & FIELD REPORT FORM

CK.		MODEL: PGM 7300	SERIAL NO: 590-000508					
MODEL	X	MODEL: PGM 7300	SERIAL NO: 590-000504					
NO.		MODEL: PGM 7320	SERIAL NO: 592-903318					
		MODEL: PGM	SERIAL NO:					
MODEL X MODEL: PGM 7300 SERIAL NO: 590-000504 NO. MODEL: PGM 7320 SERIAL NO: 592-903318 MODEL: PGM SERIAL NO: GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE LOT NO: GAM-248-1004 EXPIRATION DATE: 6-7-16								
LOT NO :	GAM-24	8-1004	EXPIRATION DATE: 6-7-16					
		METED D	EADING ACCUPACY, 100					

COMPANY	
Rice	

SITE	UNIT	SECTION	TOWN SHIP	RANGE
Vacuum Jct. A-36	A	36	17	34

SAMPLE ID	PID	SAMPLE ID	PID
SB2 @ Surface	0.11		
SB2 @ 5'	0.2		
SB2 @ 10'	0		
SB2 @ 15'	0.1		
SB2 @ 20'	0.2		
SB2 @ 25'	0		
SB2 @ 30'	0.1		
SB2 @ 35'	0.1		
SB2 @ 40'	0.1		
SB2 @ 45'	0		
SB2 @ 50'	0.1		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE: MWW CHOKS

DATE: 7/18/14



November 12, 2014

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JCT. A-36 17S/34E

Enclosed are the results of analyses for samples received by the laboratory on 11/06/14 14:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab 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.

Celey D. Keene

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



Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 11/06/2014 Sampling Date: 11/06/2014

Reported: 11/12/2014 Sampling Type: Soil

Project Name: VACUUM JCT. A-36 17S/34E Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Project Location: NOT GIVEN

Sample ID: SB 3 @ 15' (H403428-01)

Chloride, SM4500Cl-B	mg/	mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2680	16.0	11/10/2014	ND	400	100	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	11/08/2014	ND	200	99.8	200	0.972	
DRO >C10-C28	<10.0	10.0	11/08/2014	ND	212	106	200	1.95	
Surrogate: 1-Chlorooctane	101 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	110 9	% 52.1-17	6						

Sample ID: SB 3 @ 95' (H403428-02)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	944	16.0	11/10/2014	ND	400	100	400	3.92	
TPH 8015M mg/kg		/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	11/08/2014	ND	200	99.8	200	0.972	
DRO >C10-C28	<10.0	10.0	11/08/2014	ND	212	106	200	1.95	
Surrogate: 1-Chlorooctane	103	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	109	% 52.1-17	6						

Cardinal Laboratories *=Accredited Analyte

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Celey D. Keine



Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 11/06/2014 Sampling Date: 11/06/2014

Reported: 11/12/2014 Sampling Type: Soil

Project Name: VACUUM JCT. A-36 17S/34E Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Project Location: NOT GIVEN

Sample ID: SURFACE 10' WEST OF SOURCE (H403428-03)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/10/2014	ND	400	100	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	11/08/2014	ND	200	99.8	200	0.972	
DRO >C10-C28	<10.0	10.0	11/08/2014	ND	212	106	200	1.95	
Surrogate: 1-Chlorooctane	97.0	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	105	% 52.1-17	6						

Cardinal Laboratories *=Accredited Analyte

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Celeg D. Freene



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

Cardinal Laboratories *=Accredited Analyte

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Celey D. Keine

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

RDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603

Name	(505) 393-2326 FAX (505) 393-24	-	10-1	7			T			RIL	470					A	NAL	YSIS	REQU	EST		_
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roject Manager				-			+	omp									2					
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ity: Hobbs State: NM Zip: 88240					ddre									Ē								
hone #:	Fax #:							:55.					Σ		-	S/P						
Project #:	Project Owner	:	_			_		ity:			Zip:		es			TPH	ü					
Project Name:	acuum ict. A-36							tate			Z1p.		i	0	面	-	atic	TDS				
Project Location	1:						-	hon					Chlorides	TPH 8015	BTEX	exas	Cations/Anions	F				
Sampler Name:	Amber Groves				MAAT	TRIX	-	ax #	RESI	RV.	SAMPLI	NG	5	는 는	ш	œ.						
2	Sample I.D. 383@15ft \$83@95ft Surface loft west of Source	G G G)RAB OR (C)OMP.	1	GROUNDWATER	SOIL		SLUDGE	OTHER:	COOL COOL		DATE 11-16-14 11-16-14	13:00 13:15 1:08	V V	V V V			Complete					
analysis All claims inclu	and Damages. Cardinal's liability and client's exclusive remedy to dring those for negligence and any other cause whatsoever shall be Cardinal be liable for incidental or consequental damages, includising out of or related to the performance of services hereunder by	c accin					- 47 I			loce of	profits incurred by	client, its subsit	diaries,				Add	'i Phone	4.			
Rélinquished E	rising out of or related to the performance of services hereunder of	D	_	ved I	-		1				41	Phone R Fax Res	esult:	_ N		☑ No ☑ No		I Fax #				

affiliates or successors arising out of or related to the performance	Date:1/ (Receive	ad By:	Phone Result:
Rélinquished By:		- Id . A . A . A	Fax Result: ☐ Yes ☑ No Add'I Fax #:
I have been the	Time: 2:-20	M. Menson	REMARKS:
NIMINIA KNOWO)	N N	m 9 T	email results:
Relinquished By:	Date: Receiv	ed By:	heander@rice-ecs.com; knorman@rice-ecs.com;
remidulation = 3.	V		jkamplain@rice-ecs.com; regans@rice-ecs.com; lflores@rice-ecs.com;
	Time:		jkamplain@rice-ecs.com, regaris@rice-ecs.com, incress.
		Sample Condition CHECKED	lweinheimer@rice-ecs.com; kjones@riceswd.com;
Delivered By: (Circle One)			101
Delivered By: (on old old)	1100	Cool Intact (Initials)	cuisalication agrayos@rice-ecs.com
Sampler - UPS - Bus - Other:	4.2%	Yes Yes	environmental tech: agroves@rice-ecs.com
Sampler - OFS - Dus - Other		No No	

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



RICE ENVIRONMENTAL CONSULTING & SAFETY

419 West Cain Hobbs, NM 88240 PHONE: (575) 393-2967 FAX: (575) 393-0293 PID METER CALIBRATION & FIELD REPORT FORM

CK.		MODEL: PGM 7300	SERIAL NO:	590-000508
MODEL	X	MODEL: PGM 7300	SERIAL NO:	590-000504
NO.		MODEL: PGM 7320	SERIAL NO:	592-903318
		MODEL: PGM	SERIAL NO:	
		GAS COMPOSITION.	ICODITYI ENE	100PPM / AIR· BAI AN

LOT NO: GAM-248-1004	EXPIRATION DATE: 6-7-16
	METER READING ACCURACY: 100ppm

COMPANY

Rice

SITE	UNIT	SECTION	TOWN SHIP	RANGE
Vacuum Jct. A-36	A	36	17S	34E

SAMPLE ID	PID	SAMPLE ID	PID
SB3 @ Surface	· 1	SB3 @ 60'	1
SB3 @ 5'	1.1	SB3 @ 65'	1
SB3 @ 10'	0.9	SB3 @ 70'	0.8
SB3 @ 15'	0.8	SB3 @ 75'	1.2
SB3 @ 20'	1.1	SB3 @ 80'	0.9
SB3 @ 25'	1.3	SB3 @ 85'	0.5
SB3 @ 30'	1.2	SB3 @ 90'	0.6
SB3 @ 35'	0.7	SB3 @ 95'	0.8
SB3 @ 40'	1.2		
SB3 @ 45'	1.8		
SB3 @ 50'	1.9		
SB3 @ 55'	0.5		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE: HINDEN CHOKES

DATE: 11/14/14

RICE ENVIRONMENTAL CONSULTING & SAFETY

419 West Cain Hobbs, NM 88240 PHONE: (575) 393-2967 FAX: (575) 393-0293 PID METER CALIBRATION & FIELD REPORT FORM

CK.		MODEL: PGM 7300	SERIAL N	IO: 590-000508					
MODEL	X	MODEL: PGM 7300	SERIAL N	IO: 590-000504					
NO.		MODEL: PGM 7320	SERIAL N	IO: 592-903318					
		MODEL: PGM	SERIAL N	IO:					
	GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE								
LOT NO	: GAM-24	18-1004	E	EXPIRATION DATE: 6-7-16					
METER READING ACCURACY: 100ppm									
					,				

COMPANY	
Rice	

SITE	UNIT	SECTION	TOWN SHIP	RANGE
Vacuum Jct. A-36	A	36	17S	34E

SAMPLE ID	PID	SAMPLE ID	PID
Surface 10 ft. West of Source	1.3		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE: WWW GVOVEY

DATE: 11 WIN



April 04, 2014

KYLE NORMAN

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JCT A-36

Enclosed are the results of analyses for samples received by the laboratory on 03/28/14 15:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab 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.

Celey D. Keene

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



Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 03/28/2014 Sampling Date: 03/24/2014

Reported: 04/04/2014 Sampling Type: Soil

Project Name: VACUUM JCT A-36 Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Project Location: T-17S R-36E

Sample ID: VERTICAL 15' N. @ SURFACE (H400945-01)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/02/2014	ND	400	100	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	04/01/2014	ND	208	104	200	5.39	
DRO >C10-C28	<10.0	10.0	04/01/2014	ND	217	109	200	2.49	
Surrogate: 1-Chlorooctane	118	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	110	% 63.6-15	4						

Sample ID: VERTICAL 15' N. @ 1' (H400945-02)

Chloride, SM4500CI-B	mg,	/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	04/02/2014	ND	400	100	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	04/01/2014	ND	208	104	200	5.39	
DRO >C10-C28	<10.0	10.0	04/01/2014	ND	217	109	200	2.49	
Surrogate: 1-Chlorooctane	113 9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	108	% 63.6-15	4						

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any daim 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. Keine



Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 03/28/2014

Reported: 04/04/2014

Project Name: VACUUM JCT A-36
Project Number: NONE GIVEN
Project Location: T-17S R-36E

Sampling Date: 03/24/2014

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: VERTICAL 15' N. @ 2' (H400945-03)

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	04/02/2014	ND	400	100	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	04/01/2014	ND	208	104	200	5.39	
DRO >C10-C28	<10.0	10.0	04/01/2014	ND	217	109	200	2.49	
Surrogate: 1-Chlorooctane	117	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	111	% 63.6-15	4						

Sample ID: VERTICAL 15' N. @ 3' (H400945-04)

Chloride, SM4500Cl-B	mg/kg		Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	04/02/2014	ND	400	100	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	04/01/2014	ND	208	104	200	5.39	
DRO >C10-C28	<10.0	10.0	04/01/2014	ND	217	109	200	2.49	
Surrogate: 1-Chlorooctane	108	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	99.8	% 63.6-15	4						

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Celey D. Keine



Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 03/28/2014

Reported: 04/04/2014

Project Name: VACUUM JCT A-36 Project Number: NONE GIVEN Project Location: T-17S R-36E

Sampling Date: 03/24/2014 Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Sample ID: VERTICAL 15' E. @ SURFACE (H400945-05)

Chloride, SM4500Cl-B ma/ka Analyzed Ry: AD

ilig	/ Kg	Allalyze	u by. AP					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
5920	16.0	04/02/2014	ND	400	100	400	3.92	
mg,	/kg	Analyze	d By: ms					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<50.0	50.0	04/01/2014	ND	208	104	200	5.39	
286	50.0	04/01/2014	ND	217	109	200	2.49	
	Result 5920 mg, Result <50.0	Result Reporting Limit 5920 16.0 mg/kg Result Reporting Limit <50.0	Result Reporting Limit Analyzed 5920 16.0 04/02/2014 mg/kg Analyzed Result Reporting Limit Analyzed <50.0	5920 16.0 04/02/2014 ND mg/kg Analyzed By: ms Result Reporting Limit Analyzed Method Blank <50.0	Result Reporting Limit Analyzed Method Blank BS 5920 16.0 04/02/2014 ND 400 mg/kg Analyzed By: ms Result Reporting Limit Analyzed Method Blank BS <50.0	Result Reporting Limit Analyzed Method Blank BS % Recovery 5920 16.0 04/02/2014 ND 400 100 mg/kg Analyzed By: ms Result Reporting Limit Analyzed Method Blank BS % Recovery <50.0	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC 5920 16.0 04/02/2014 ND 400 100 400 mg/kg Analyzed By: ms Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC <50.0	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD 5920 16.0 04/02/2014 ND 400 100 400 3.92 mg/kg Analyzed By: ms Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD <50.0

Surrogate: 1-Chlorooctane 115 % 65.2-140 112 % 63.6-154 Surrogate: 1-Chlorooctadecane

Sample ID: VERTICAL 15' E. @ 2' (H400945-06)

Chloride, SM4500CI-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3440	16.0	04/02/2014	ND	400	100	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	04/01/2014	ND	208	104	200	5.39	
DRO >C10-C28	<10.0	10.0	04/01/2014	ND	217	109	200	2.49	

Surrogate: 1-Chlorooctadecane 106 % 63.6-154

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Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 03/28/2014

Reported: 04/04/2014

Project Name: VACUUM JCT A-36
Project Number: NONE GIVEN
Project Location: T-17S R-36E

Sampling Date: 03/24/2014 Sampling Type: Soil

Sampling Condition: Cool & Intact

Sample Received By: Jodi Henson

Sample ID: VERTICAL 15' E. @ 8' (H400945-07)

Chloride, SM4500CI-B	mg,	/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1840	16.0	04/02/2014	ND	400	100	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	04/01/2014	ND	208	104	200	5.39	
DRO >C10-C28	198	10.0	04/01/2014	ND	217	109	200	2.49	
Surrogate: 1-Chlorooctane	91.9	% 65.2-14	0						

Sample ID: VERTICAL 15' S. @ SURFACE (H400945-08)

Surrogate: 1-Chlorooctadecane

104 %

63.6-154

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	04/02/2014	ND	400	100	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	04/01/2014	ND	208	104	200	5.39	
DRO >C10-C28	<10.0	10.0	04/01/2014	ND	217	109	200	2.49	
Surrogate: 1-Chlorooctane	93.8	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	91.0	% 63.6-15	4						

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Fax To: (575) 397-1471

Received: 03/28/2014

Reported: 04/04/2014

Project Name: VACUUM JCT A-36
Project Number: NONE GIVEN
Project Location: T-17S R-36E

Sampling Date: 03/24/2014

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: VERTICAL 15' S. @ 1' (H400945-09)

Chloride, SM4500CI-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1470	16.0	04/02/2014	ND	400	100	400	3.92	
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	04/02/2014	ND	187	93.4	200	1.94	
DRO >C10-C28	300	10.0	04/02/2014	ND	216	108	200	2.56	

Surrogate: 1-Chlorooctane 76.8 % 65.2-140
Surrogate: 1-Chlorooctadecane 100 % 63.6-154

Sample ID: VERTICAL 15' S. @ 2' (H400945-10)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	04/02/2014	ND	400	100	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	04/02/2014	ND	187	93.4	200	1.94	
DRO >C10-C28	15.1	10.0	04/02/2014	ND	216	108	200	2.56	
Surrogate: 1-Chlorooctane	98.8	% 65.2-14	<u> </u>						

Surrogate: 1-Chlorooctane 98.8 % 65.2-140
Surrogate: 1-Chlorooctadecane 97.7 % 63.6-154

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Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 03/28/2014

Reported: 04/04/2014

Project Name: VACUUM JCT A-36
Project Number: NONE GIVEN
Project Location: T-17S R-36E

Sampling Date: 03/24/2014

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: VERTICAL 15' S. @ 3' (H400945-11)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	04/02/2014	ND	400	100	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	04/02/2014	ND	187	93.4	200	1.94	
DRO >C10-C28	<10.0	10.0	04/02/2014	ND	216	108	200	2.56	
Surrogate: 1-Chlorooctane	94.1	% 65.2-14	10						
Surrogate: 1-Chlorooctadecane	93.2	% 63.6-15	4						

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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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

RDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

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[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

RDINAL LABORATORIES

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Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Time.	Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



April 23, 2015

KYLE NORMAN

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JCT A-36

Enclosed are the results of analyses for samples received by the laboratory on 04/22/15 16:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab 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.

Celey D. Keene

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

04/22/2015



Analytical Results For:

Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 04/22/2015 Sampling Date:

Reported: 04/23/2015 Sampling Type: Soil

Project Name: VACUUM JCT A-36 Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Project Location: T-17S R-34E

Sample ID: VERTICAL 1 @ SS (H501044-01)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/23/2015	ND	432	108	400	7.69	
TPH 8015M	PH 8015M mg/kg								
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2015	ND	200	99.9	200	5.98	
DRO >C10-C28	<10.0	10.0	04/22/2015	ND	214	107	200	9.62	
Surrogate: 1-Chlorooctane	98.3	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	94.6	% 52.1-17	6						

Sample ID: VERTICAL 1 @ 1' (H501044-02)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	04/23/2015	ND	432	108	400	7.69	
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	04/22/2015	ND	200	99.9	200	5.98	
DRO >C10-C28	<10.0	10.0	04/22/2015	ND	214	107	200	9.62	
Surrogate: 1-Chlorooctane	102 :	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	99.4	% 52.1-17	6						

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Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 04/22/2015

Reported: 04/23/2015 Project Name: VACUUM JCT A-36

Project Number: NONE GIVEN
Project Location: T-17S R-34E

Sampling Date: 04/22/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: VERTICAL 1 @ 2' (H501044-03)

Chloride, SM4500CI-B Analyzed By: AP Reporting Limit Analyte Result Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier Chloride 80.0 04/23/2015 ND 16.0 432 108 400 7.69 Analyzed By: MS TPH 8015M mg/kg Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier GRO C6-C10 <10.0 10.0 04/22/2015 ND 200 99.9 200 5.98 DRO >C10-C28 <10.0 10.0 04/22/2015 ND 107 200 9.62 214 104 % 47.2-157 Surrogate: 1-Chlorooctane 52.1-176 98.5 % Surrogate: 1-Chlorooctadecane

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Celey D. Keine



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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Celey D. Keine



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

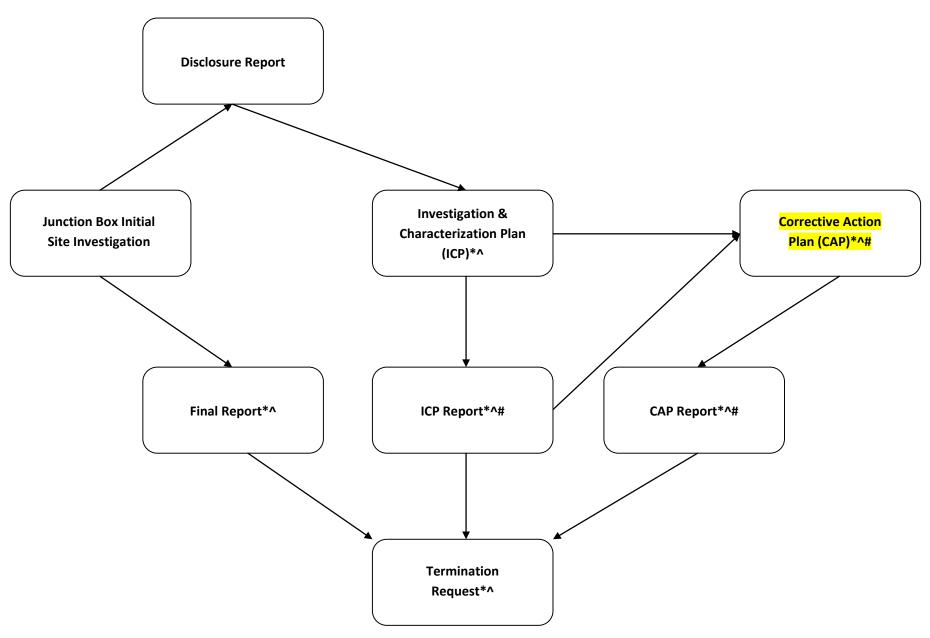
101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

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^{*}Reports must have OCD approval for the completion of the report status and before the next step can begin.

^OCD can request additional information or further investigation during any point in remediation activities.

#ROC may submit an extension request due to resource management issues or safety concerns in the field.