1R-425-86

WORKPLANS

Date: 4-16-12

L. Peter Galusky, Jr. Ph. Dy./P.G.

Texerra LLC

7917 APR 25 A 11: 1 20055 Laredo Lane Monument, Colorado 80132 Tel: 719-339-6791 E-mail: lpg@texerra.com

April 16th, 2012

Mr. Edward Hansen

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe, New Mexico 87505

RE: Corrective Action Plan

Rice Operating Company – Vacuum SWD System Vacuum N-28-2 vent (Formerly Vacuum K-28-2 vent) NMOCD Case Number: 1R425-86. UL/N, Sec. 28, T17S, R35E

Sent via Certified U.S. Mail w/ Return Receipt No. 7011 0110 0001 5863 4875

Mr. Hansen:

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 work to date completed according to the Investigation and Characterization Plan of May 3rd, 2011, and OCD approved on June 9th, 2011, for this site and presents a Corrective Action Plan (CAP) to ensure the protection of groundwater resources.

The location of the Vacuum N-28-2 vent site is given in Figure 1. A summary of soil boring analyses from samples taken to date is given in Figures 2a&b. Copies of laboratory analyses are given in the Appendix.

The depth to groundwater is estimated to be approximately 68 ft bgs. High levels of residual soil chlorides were found in all of the ten soil borings taken. Field PID readings indicated residual soil petroleum hydrocarbons in several locations, but these tended to diminish with depth.

It should be noted that site is located within the immediate vicinity of oil field facilities having a long history with apparent surface spillage (Figures 3 to 8) and that the elevated levels of residual soil chlorides are likely due to activities not directly caused by ROC operations. Nevertheless, in order to protect groundwater quality from the potential migration of residual soil chlorides ROC proposes the following actions to serve as a Corrective Action Plan (CAP) for this project. These measures will provide protection beyond the impacts directly caused by past operation of the Vacuum N-28-2 vent.

Vacuum N-28-2 vent

ROC will:

Install a 20-mil Reinforced Sub-surface Infiltration Barrier and Restore the Ground Surface

- Excavate the area encompassed by the soil borings (55 by 61 ft as shown in Figures 2a&b) to a depth of approximately 3 ft bgs (limited by the presence of hard rock).
- Install a 20-mil, reinforced poly liner over a 6 inch layer of clean blow sand and pad this with another 6 inch layer of the same.
- The excavation will then be backfilled with soil that chlorides measure less than 500 mg/kg and PID hydrocarbons measure less than 100 ppm. Excavated soil will be evaluated for use as backfill, and any soil requiring disposal will be properly disposed of at a NMOCD approved facility.
- Restore the ground surface to natural contours and seed with a blend of native vegetation mix.

Report the Course and Results of Work to NMOCD

• Provide a brief report to NMOCD with photographs summarizing the course of these corrective actions and a request for remediation termination. Please note that we do not anticipate the need for, nor propose to, install any monitor wells as our proposed liner system will provide effective protection of groundwater from residual chlorides at this former ROC junction box. It is likely that any chlorides in groundwater above natural baseline levels are caused by historical sources up-gradient of and surrounding this former junction box. Figures 3 through 8 historical aerial photos show historic, non-ROC facilities surrounding the location of this former box. This is particularly clear in the 1966 and 1949 historical aerial photos.

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 ownership/usage basis.

We appreciate your consideration of this ICP report. Please do not hesitate to contact either Hack Conder of Rice Operating Company or myself if you have any questions or need additional information.

Sincerely,

L. Peter Galusky, Jr. Ph.D.

Copy: Rice Operating Company

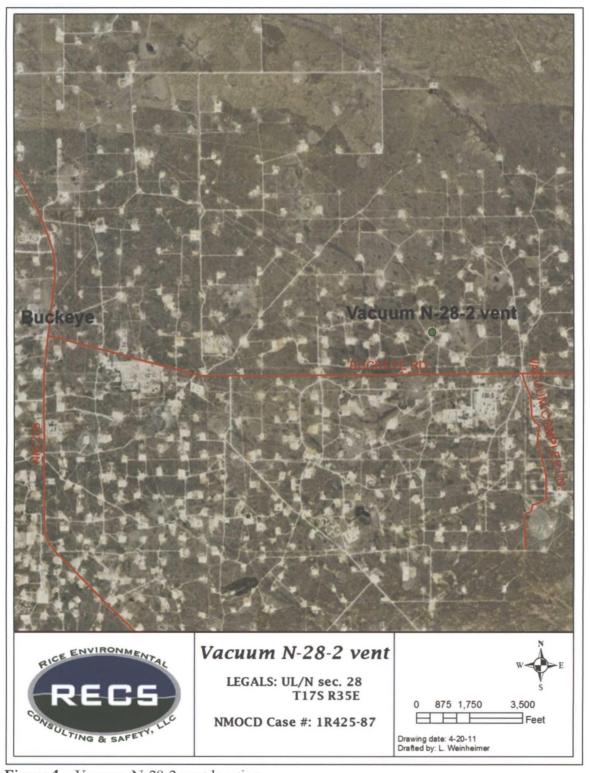


Figure 1 – Vacuum N-28-2 vent location.

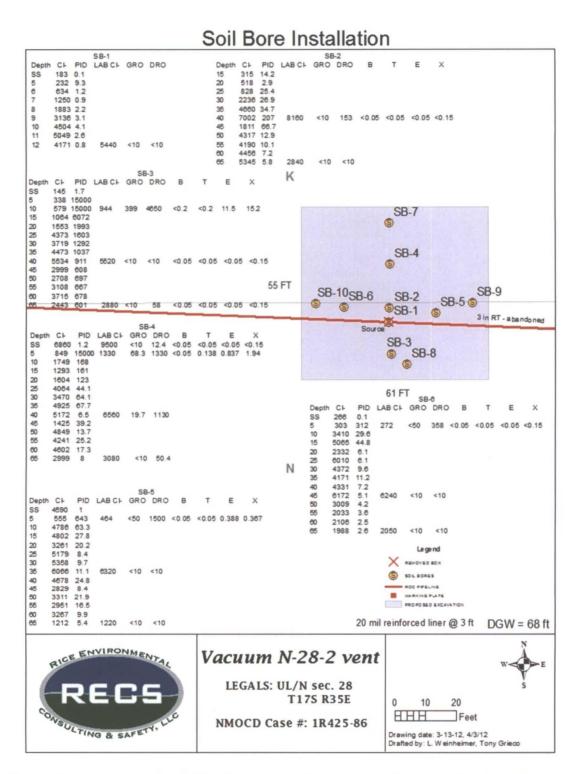


Figure 2a – Summary of soil chloride and petroleum hydrocarbon concentrations from samples taken in June 2011.

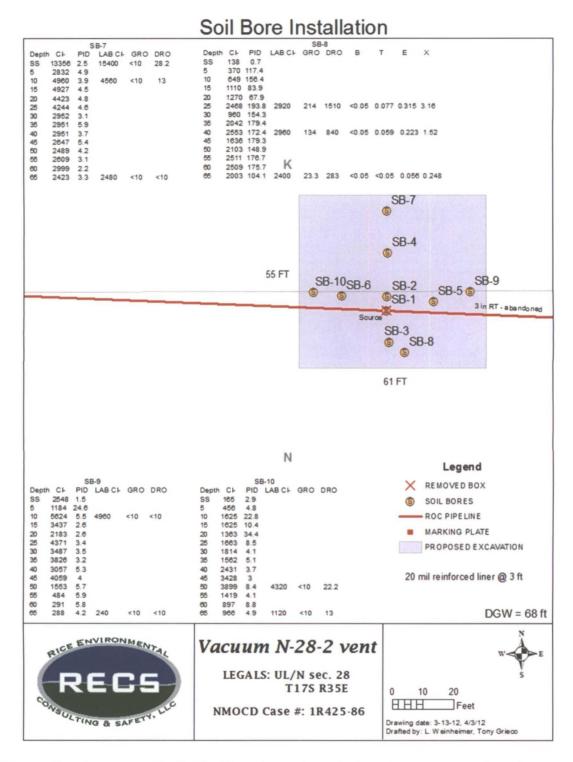


Figure 2b – Summary of soil chloride and petroleum hydrocarbon concentrations from samples taken in March 2012.

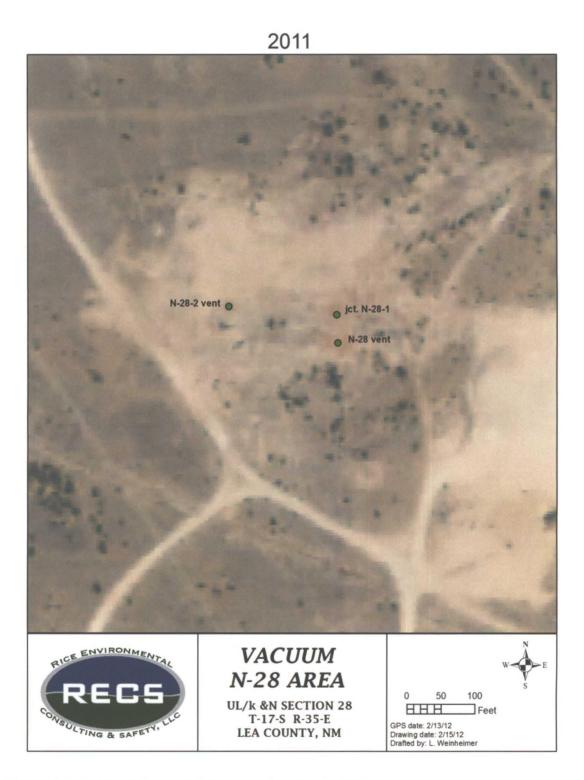


Figure 3 – Aerial of Vacuum N-28-2 vent location in 2011.

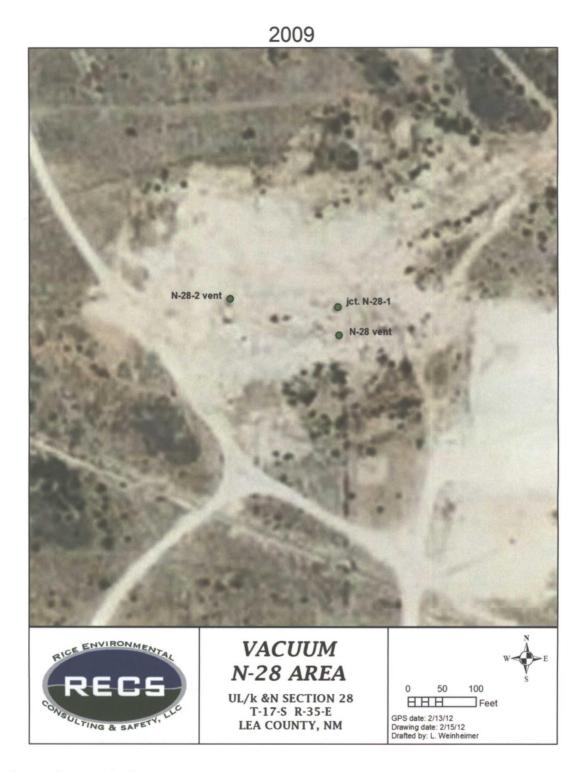


Figure 4 – Aerial of Vacuum N-28-2 vent location in 2009.

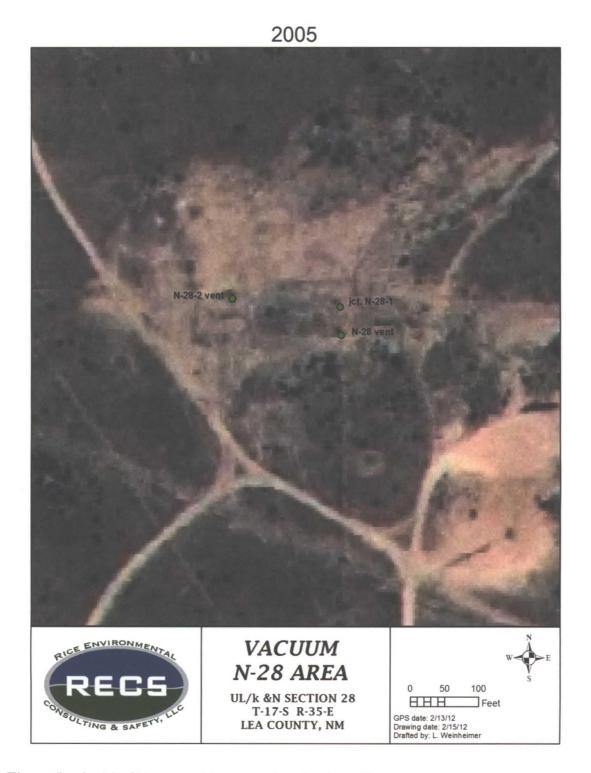


Figure 5 – Aerial of Vacuum N-28-2 vent location in 2005.

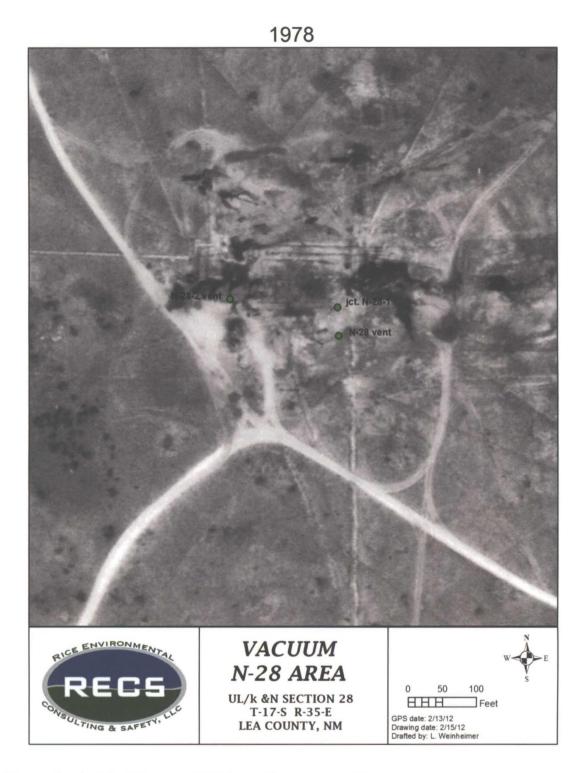


Figure 6 – Aerial of Vacuum N-28-2 vent location in 1978.

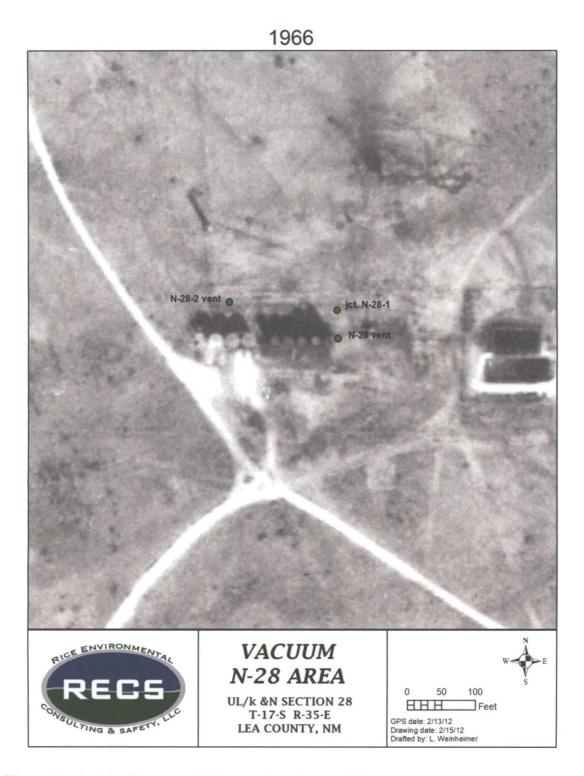


Figure 7 – Aerial of Vacuum N-28-2 vent location in 1966.



Figure 8 – Aerial of Vacuum N-28-2 vent location in 1949.

Appendix - Soil Analysis Laboratory Reports



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

June 20, 2011

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM N-28-2 VENT

Enclosed are the results of analyses for samples received by the laboratory on 06/09/11 10:10.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes Method SW-846 8260 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable

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 (V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keine

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.

Celey D. Keene

Lab Director/Quality Manager

Page 1 of 11



Analytical Results For:

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

Fax To: (575) 397-1471

Received:

06/09/2011 06/20/2011 Sampling Date: Sampling Type: 06/08/2011 Soil

Reported: Project Name: Project Number:

VACUUM N-28-2 VENT NONE GIVEN

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

Project Location:

NOT GIVEN

Sample ID: SB 2 @ 40' (H101194-01)

TEX 8260B	mg,	'kg	Analyze	d By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	85	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2011	ND	2.21	111	2.00	7.93	
Toluene*	<0.050	0.050	06/13/2011	ND	2.24	112	2.00	7.82	
Ethylbenzene*	<0.050	0.050	06/13/2011	ND	2.32	116	2.00	8.13	
Total Xylenes*	<0.150	0.150	06/13/2011	ND	6.54	109	6.00	8.53	
Surrogate: Dibromofluoromethane	100	100 % 80-120						,	
Surrogate: Toluene-d8	104	104 % 80-120							
Surrogate: 4-Bromofluorobenzene	114	114% 80-120							
Chloride, SM4500CI-B	mg,	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8160	16.0	06/11/2011	ND	432	108	400	3.77	
TPH 8015M	mg j	'kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/14/2011	ND	216	108	200	1.49	
DRO >C10-C28	153	10.0	06/14/2011	ND	203	102	200	7.13	
Surrogate: 1-Chlorooctane	123 9	% 70-130							
Surrogate: 1-Chlorooctadecane	139 9	% 70-130							

Cardinal Laboratories

*=Accredited Analyte

PLACE MOTE: Listilly and Damages. Conduct's fability and clerc's enclose remote for any clean arising, whether based in contract or tox, shall be intend to the amount pand by clear for analyses. All claims, including blook for regisjence and any other cause whistoners shall be demand warder unless made in wetling and received by Carlinda within thirty (30) days after completion of the applicable service. In no event shall Customal be label for incidental or consequential damages, anduding, without lentitions, business intermotions, loss of units countries for text of price countries. The contraction of the services between or the services between the countries and claims and countries. The countries are contracted countries in the whole text company of the above faster incenses or distance, which will be contracted countries in the whole text company of the above faster incenses or distance, which is contracted countries in the whole text company of the above faster incenses or distance, which is contracted countries.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 2 of 11



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: Reported: Project Name:

Project Number:

Project Location:

06/09/2011 06/20/2011

VACUUM N-28-2 VENT NONE GIVEN

NOT GIVEN

Sampling Date:

Sampling Type: Sampling Condition: Sample Received By: 06/08/2011

Soil Cool & Intact Jodi Henson

Sample ID: SB 2 @ 65' (H101194-02)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2840	16.0	06/11/2011	ND	432	108	400	3.77	
TPH 8015M	mg/kg		Analyze	d By: AB					
Analyte -	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/14/2011	ND	216	108	200	1.49	
DRO >C10-C28	<10.0	10.0	06/14/2011	ND	203	102	200	7.13	
Surrogate: 1-Chlorooctane	Ш	% 70-130)						
Surrogate: 1-Chlorooctadecane	1315	% 70-130)						

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*=Accredited Analyte

Celey D. Keine Celey D. Keene, Lab Director/Quality Manager

Page 3 of 11



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: Reported: Project Name: 06/09/2011 06/20/2011 VACUUM N-28-2 VENT NONE GIVEN Sampling Date: Sampling Type: Sampling Condition: Sample Received By: 06/08/2011 Soil Cool & Intact Jodi Henson

Project Number: Project Location:

NOT GIVEN

Sample ID: SB 3 @ 10' (H101194-03)

BTEX 8260B	mg,	/kg	Analyze	ed By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	06/13/2011	ND	2.21	111	2.00	7.93	
Toluene*	<0.200	0.200	06/13/2011	ND	2.24	112	2.00	7.82	
Ethylbenzene*	11.5	0.200	06/13/2011	ND	2.32	116	2.00	8.13	
Total Xylenes*	15.2	0.600	06/13/2011	ND	6.54	109	6.00	8.53	
rrogate: Dibromofluoromethane 96.5 % 80-12)							
Surrogate: Toluene-d8	e: Toluene-d8 101 % 80-126)						
urrogate: 4-Bromofluorobenzene 111 % 80-120)							
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	944	16.0	06/11/2011	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	ed By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	399	50.0	06/14/2011	ND	216	108	200	1.49	
DRO >C10-C28	4650	50.0	06/14/2011	ND	203	102	200	7.13	
Surrogate: 1-Chlorooctune	123	% 70-130							
Surrogate: 1-Chlorooctadecane	130	% 70-130							

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*=Accredited Analyte

R.E.S.E. MOTE: Usefity and Damayes. Curdon's liability and dient's exclusive remety for any claim arising, whether based in contract or tort, shall be limited to the amount paid by cleent for analyses. All claims, including those for regisjonce and any other cases whatevorer shall be deemed waved unless made in writing and mechanic by Cardonia width thirty, ((3)) Giry after completion of the applicable service. In no event shall Curdonia be labely for incidental or concentrated damages, moduling, without imitation, business intermotions, loss of use, or loss of profits incomed by client, its substitute, it is substituted in a state of the performance of the services becamed by Cardonia, regardless of whether such claims is stated come and of the profit and according to the contract of the services becamed of contract allocations.

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Celey D. Keene, Lab Director/Quality Manager

Page 4 of 11



Analytical Results For:

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

Fax To: (575) 397-1471

Received: Reported: Project Name: 06/09/2011 06/20/2011 VACUUM N-28-2 VENT NONE GIVEN Sampling Date: Sampling Type: Sampling Condition:

Sample Received By:

06/08/2011 Soil Cool & Intact Jodi Henson

Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sample ID: SB 3 @ 40' (H101194-04)

BTEX 82608	mg,	kg	Analyze	ed By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2011	ND	2.21	111	2.00	7.93	
Toluene*	<0.050	0.050	06/13/2011	ND	2.24	112	2.00	7.82	
Ethylbenzene*	<0.050	0.050	06/13/2011	ND	2.32	116	2.00	8.13	
Total Xylenes*	<0.150	0.150	06/13/2011	ND	6.54	109	6.00	8.53	
Surrogate: Dibromofluoromethane	107	107 % 80-120							
Surrogate: Toluene-d8	108 % 80-120								
Surrogate: 4-Bromofluorobenzene	117	117 % 80-120							
Chioride, SM4500CI-B	mg,	'kg	Analyze	ed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BŞ	% Recovery	True Value QC	RPD	Qualifier
Chloride	5520	16.0	06/11/2011	NĎ	432	108	400	3.77	
TPH 8015M	mg,	kg	Analyze	ed By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/14/2011	ND	216	108	200	1.49	
DRO >C10-C28	<10.0 10.0		06/14/2011	ND	203	102	200	7.13	
Surrogate: 1-Chlorooctane	123 5	% 70-130							
Surrogate: 1-Chlorooctadecane	143 % 70-130								

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PLASE MOTE: Ubbilly and Danages. Cardwall labelity and clern's enclose remely for any clear arising, whether lassed in curtical or tant, shall be finited to the annount paid by clear for analyses. All cleans, including those for nephygenic and any other cases whatcover shall be deemed wavelunders unless made in wirring and mechanically clearly within clearly (3)) days after competition of the applicable service. In no event shall curtical be label for incremental demayer, anduling, without installation, business interruptions, loss of use, or loss of profits normed by cleans, its supplications, the states of the profit and or of the applicable service. In no event shall curtical to the profit manure of the services between the Cardwall, regardless of whether such cleans to service leaves seal enterruption of the services between of the services between of the services between the clean of the services and the services between the services are serviced to the services between the services are serviced to the services between the services betwee

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Celey D. Keene, Lab Director/Quality Manager

Page 5 of 11



Analytical Results For:

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

Fax To: (575) 397-1471

Received: Reported: Project Name: 06/09/2011 06/20/2011 VACUUM N-28-2 VENT NONE GIVEN Sampling Date: Sampling Type: Sampling Condition: Sample Received By: 06/08/2011 Soil Cool & Intact Jodi Henson

Project Number: Project Location:

NOT GIVEN

127 %

70-130

Sample ID: SB 3 @ 65' (H101194-05)

BTEX 8260B	mg,	'kg	Analyze	d By: CMS		_			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2011	ND	2.21	111	2.00	7.93	
Toluene*	<0.050	0.050	06/13/2011	ND	2.24	112	2.00	7.82	
Ethylbenzene*	<0.050	0.050	06/13/2011	ND	2.32	116	2.00	8.13	
Total Xylenes*	<0.150	0.150	06/13/2011	ND	6.54	109	6.00	8.53	
Surrogate: Dibromofluoromethane	94.1 % 80-120								
Surrogate: Toluene-d8	95.1	% 80-120							
Surrogate: 4-Bromofluorobenzene	104 % 80-120								
Chloride, SM4500CI-B	mg,	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2880	16.0	06/11/2011	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	85	% Recovery	True Value QC	RPD	Qualifier
	<10.0 10.0		06/14/2011	ND	216	108	200	1.49	
GRO C6-C10	<10.0	10.0	00/14/2011						

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Surrogate: 1-Chlorooctadecane

*=Accredited Analyte

PLISE MOTT: Uability and Damages. Cordinal's lability and client's exclusive remotely for any client arising, whether based in contract or tort, shall be limited to the amount paid by client for examples. All claims, including base for registroce and any other clause whatescere shall be deserted waved unless made in writing and received by Cardinal within theiry (30) client after completion of the applicable service. In no event shall Cardinal be lable for incidenced or consequential changes including, without includious, business interruptions, loss of use, or loss of profits incomed by clark its substaines, fallibases or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such

Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager

Page 6 of 11



Analytical Results For:

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

Fax To: (575) 397-1471

Sampling Date: Sampling Type:

Sampling Condition:

Sample Received By:

06/09/2011 Received: 06/20/2011 Reported: Project Name: Project Number:

VACUUM N-28-2 VENT NONE GIVEN

06/08/2011 Soil Cool & Intact Jodi Henson

Project Location: NOT GIVEN

Sample ID: SB 4 @ SURFACE SAMPLE (H101194-06)

BTEX 8260B	mg,	kg	Analyze	d By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/14/2011	ND	2.21	111	2.00	7.93	
Toluene*	<0.050	0.050	06/14/2011	ND	2.24	112	2.00	7.82	
Ethylbenzene*	<0.050	0.050	06/14/2011	ND	2.32	116	2.00	8.13	
Total Xylenes*	<0.150	0.150	06/14/2011	ND	6.54	109	6.00	8.53	
Surrogate: Dibromofluoromethane	97,4	97.4 % 80-120							
Surrogate: Toluene-d8	102 % 80-120								
Surrogate: 4-Bromofluorobenzene	110 % 80-120								
Chloride, SM4500Cl-B	mg,	'kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9500	16.0	06/11/2011	ND	432	108	400	3.77	
TPH 8015M	mg,	kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/13/2011	ND	224	112	200	12.3	
DRO >C10-C28			06/13/2011	ND	206	103	200	13.9	
Surrogate: 1-Chlorooctane	104 !	% 70-130							
Surrogate: 1-Chlorooctadecane	110 9	% 70-130							

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Celey D. Keene, Lab Director/Quality Manager

Page 7 of 11



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received:

06/09/2011

Sampling Date:

06/08/2011

Reported:

06/20/2011

Sampling Type:

Soil

Project Name:

VACUUM N-28-2 VENT

Sampling Condition:

Cool & Intact

Project Number: Project Location:

NONE GIVEN NOT GIVEN

Sample Received By:

Jodi Henson

Sample ID: SB 4 @ 5' (H101194-07)

BTEX 8021B	mg/	kg	Analyze	d By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	06/20/2011	ND	1.89	94.5	2.00	3.65	
Toluene*	0.138	0.050	06/20/2011	ND	2.00	100	2.00	4.10	
Ethylbenzene*	0.837	0.050	06/20/2011	ND	2.02	101	2.00	3.90	
Total Xylenes*	1.94	0.150	06/20/2011	ND	6.00	100	6.00	4.06	
Surrogate: 4-Bromofluorobenzene (PIL	106 9	% 70-130							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1330	16.0	06/11/2011	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	68.3	50.0	06/13/2011	ND	142	70.9	200	1.47	
DRO >C10-C28	1330	50.0	06/13/2011	ND	148	73.9	200	3.69	
Surrogate: 1-Chlorooctane	87.0	% 70-130							
Surrogate: 1-Chlorooctadecane	78.5	% 70-130							

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Page 8 of 11.



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: Reported: Project Name: 06/09/2011 06/20/2011 VACUUM N-28-2 VENT NONE GIVEN Sampling Date: Sampling Type: Sampling Condition:

Sample Received By:

06/08/2011 Soil Cool & Intact Jodi Henson

Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sample ID: SB 4 @ 65' (H101194-08)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride 3		16.0	06/11/2011	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	ed By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/13/2011	ND	142	70.9	200	1.47	
DRO >C10-C28	50.4	10.0	06/13/2011	ND	148	73.9	200	3.69	
Surrogate: 1-Chlorooctane	81.5	% 70-130)			***************************************			
Surrogate: 1-Chlorooctadecane	ne 92.3 % 70-130		ı						

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PLIGE NOTE: Underly and Domages. Cardina's biblicky and client's exclusive memory for any dam arising, whether based in contract or tor, shall be limited to the amount past by client for analyses. All claims, including those for negligence and any other cause whistoner shall be learned awards carees made in writing and restricted by Cardinal which this (15) Gays after completion of the applicable practice. In no event shall Curried be label for nederical or consequential damages, enduring, which clientiation, business interruptions, loss of use, or loss of ports incurred by client, is subsidiaries, diffuses or accessors arising out of or related to the performance of the services between or of the source and control and the state of the source and the source of the source of the source and the source of the

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 9 of 11



Notes and Definitions

Z-01	One or more surrogates above historical limits.
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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RLISES (MITT): Liability and Disnappes. Cardinal's bubbly and clearly scale per receive remote for any clean arising, whether board in contract or tot, shall be a femined to the amount paid by clear for pealsyses. All dams, including those for regispose any other custs evaluations are shall be extended from a femine of the special paid of the per pealsyses events. In no event shall Cardinal arising the per per pealsy of the pealsyses, the peal of the pealsyses events. In no event shall Cardinal arising the pealsyses including, without limitation, bosness interruptions, loss of use, or loss of profits nourment by clear, its solid sales, as the peal of the pealsyses of the pealsy

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 10 of 11





June 17, 2011

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM N-28-2 VENT

Enclosed are the results of analyses for samples received by the laboratory on 06/09/11 10:10.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method SW-846 8260 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable

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 (V2, V3)

Accreditation applies to public drinking water matrices.

Celey & Keine

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.

Celey D. Keene

Lab Director/Quality Manager

Page 1 of 4



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: Reported: Project Name:

Project Number:

Project Location:

06/09/2011 06/17/2011

VACUUM N-28-2 VENT NONE GIVEN NOT GIVEN Sampling Date: Sampling Type: Sampling Condition: 06/08/2011 Soil

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

Sample ID: SB 4 @ 40' (H101195-01)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6560	6560 16.0		ND	416	104	400	0.00	
TPH 8015M	mg/kg		Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	19.7	10.0	06/14/2011	ND	216	108	200	1.49	
DRO >C10-C28	1130	10.0	06/14/2011	ND	203	102	200	7.13	
Surrogate: 1-Chlorooctane	128	% 70-136							
Surrogate: 1-Chlorooctadecane	ne 139% 70-130								

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*=Accredited Analyte

PERSEX DATE: Usability and Disnapes. Cordinal's Babbly and dearth exclusive remoty for any claim amang, whether based in contract or bit, shall be brinded to the amount past by clear for analyses. All claims, including those for negligence and any other cause exhabitions shall be deemed shalled writes mode in writing and encounted by Cervinal within thirty (20) days after contract in the applicable entries. In or over that Cardinal for consequential and analyses excluded in the applicable entries. In or over that Cardinal for consequential and analyses excluded in the analyses of the analyses entries the analyses of the analyses of the services in the analyses of the analyses o

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 2 of 4

Z-01



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

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 SM4500CI-B does not require samples be received at or below 6°C

One or more surrogates above historical limits.

Cardinal Laboratories

*=Accredited Analyte

REASE WITH Unbliky and Disnages. Confliants liability and disn'ts excluser remoty for any dain arising, whether based in contract or tit, shall be intrined to the amount paid by clear (or palayees. All dains, including from the register and any other course exhabition of the polytopic parts.

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 4

ARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND 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	ompany Name: Rice Operating Company						BILL TO									/	ANAL	YSIS	RE	QUE	ST			
Project Manage	r: Hack Conder						P	.O. #	<i>t:</i>									0						
Address: 122							c	omp	any	<u>':</u>							က္ခ	C40				Ī		
City: Hobbs		Zip:	88	240			Α	ttn:						i			ō	2				İ		1
Phone #: 575-3							Α	ddre	985:								Ë	Thru				1	1	
Project #:	Project Owner	:					С	ity:					ا ہر ا	Σ		I	//s					ł	}	1
Project Name: \	/acuum N-28-2 vent						s	tate			Zip:	,	ĕ	5	\mathbf{v}	교	Ë	ğ				<u> </u>		1
Project Location	ı: Vacuum N-28-2						Р	hon	e #:				Chlorides	8015	BTEX	Texas TPH	Cations/Anions	Extended				1	. 1	l
Sampler Name: Jordan Woodfin						Fax #:				읃	2	BI	ä	Ö	ШX									
FOR LAB USE ONLY MATRIX						RIX		PR	ESE	RV.	SAMPLI	NG	ਹ	TPH		[e]	te	Σ						ı
Lab I.D. H 101199	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	SOIL	OIL	SLUDGE OTHER -	OTHER: ACIDIBASE: ICE / COOL OTHER:	DATE	DATE TIME					Complete	TPH 8015								
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PLEASE NOTE: Liability and Damages. Cardina's lability and clearie sexultaive remody for any claim string whether based in contract or lost, shall be limited to the encount paid by the cleant for the "enables and a claim is including those for negligence and any other cause whatecover shall be deamed waived universe made in willing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidently and consequential damages, including without limitation, business interruptions, loss of use, or less of profits incurred by clear, it is subsidiaries,

	of services hereunder by Cardinal, regardless of whether such claim is bose	d upon any of the above stated reasons or otherwise.	
Relinquished By;	Date:// Received By:		Add'i Phone #:
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Jordan Woodfin	130 m	REMARKS: * Somple I Dru	
Relinquished By:	Date Q Received By:	email results	uliilu de
[[m(=	Time DIE WOOL See	MADW Hoondor@ricogued.com	i iucadfin@diaa aas aam:
Delivered By: (Circle One)	/ Sample Condition	CHECKED BY: TICONDER CONCESSION.COM	; jwoodfin@rice-ecs.com;
Sampler - UPS - Bus - Other:	-13.5 Cool Intact -13.5 Pares (1 Yes	Lweinheimer@rice-ecs.	com kjones@riceswd.com

#26

NEED SAMPLES BACK, PLEASE

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



June 17, 2011

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM N-28-2 VENT

Enclosed are the results of analyses for samples received by the laboratory on 06/10/11 16:20.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method SW-846 8260 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keine

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: Reported: Project Name: 06/10/2011 06/17/2011

VACUUM N-28-2 VENT NONE GIVEN

Sampling Date: Sampling Type: Sampling Condition: Sample Received By: 06/09/2011 Soil Cool & Intact Jodi Henson

Project Number: Project Location:

NOT GIVEN

Sample ID: SB 5 @ 5' (H101214-01)

BTEX 8260B	mg,	/kg	Analyze	ed By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/14/2011	ND	2.21	111	2.00	7.93	
Toluene*	<0.050	0.050	06/14/2011	ND	2.24	112	2.00	7.82	
Ethylbenzene*	0.388	0.050	06/14/2011	ND	2.32	116	2.00	8.13	
Total Xylenes*	0.367	0.150	06/14/2011	ND	6.54	109	6.00	8.53	
Surrogate: Dibromofluoromethane	97.6	% 80-120)						
Surrogate: Toluene-d8	104	% 80-120)						
Surrogate: 4-Bromofluorobenzene	. 115	% 80-120)						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	06/15/2011	ND	448	112	400	0.00	
TPH 8015M	mg,	/kg	Analyze	ed By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	06/16/2011	ND	206	103	200	5.32	
DRO >C10-C28	1500	50.0	06/16/2011	ND	187	93.3	200	5.61	
Surrogate: 1-Chlorooctane	91.3	% 70-130						***********	
Surrogate: 1-Chlorooctadecane	98.8	% 70-130							

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PLESE HOTTS: Libbility and Damages. Cardwal's liability and client's exclusive remedy for any claim arising, whether based in contact or tors, shall be finited to the amount paid by client for analyses. All clients, including those for regispence and any other closer whether which the production of the applicable service. In no event shall Curried be label for incidents or consequential damages, including which introducts, shall clients, business interruptions, loss of use, or loss of purities incurred by district, as subsistents, attained on the state of the production of the prod

Coley D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 2 of 7



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: Reported: Project Name: Project Number:

Project Location:

06/10/2011 06/17/2011 VACUUM N-28

VACUUM N-28-2 VENT NONE GIVEN NOT GIVEN Sampling Date: Sampling Type: Sampling Condition:

Sample Received By:

06/09/2011 Soil Cool & Intact Jodi Henson

Sample ID: SB 5 @ 35' (H101214-02)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6320	16.0	06/15/2011	ND	448	112	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/16/2011	ND	206	103	200	5.32	
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	187	93.3	200	5.61	
Surrogate: 1-Chlorooctane	82.5	% 70-130)			*******			

Surrogate: 1-Chlorooctane 82.5 % 70-130
Surrogate: 1-Chlorooctadecane 102 % 70-130

Sample ID: SB 5 @ 65' (H101214-03)

				d By: HM	Analyze	kg	mg/	Chloride, SM4500CI-B
RPD	True Value QC	% Recovery	BS	Method Blank	Analyzed	Reporting Limit	Result	Analyte
0.00	400	112	448	ND	06/15/2011	16.0	1220	Chloride
				d By: AB	Analyze	/kg	mg/	TPH 8015M
RPD	True Value QC	% Recovery	BS	Method Blank	Analyzed	Reporting Limit	Result	Analyte
5.32	200	103	206	ND	06/16/2011	10.0	<10.0	GRO C6-C10
5.61	200	93.3	187	ND	06/16/2011	10.0	<10.0	DRO >C10-C28
	200	93.3	187	ND				DRO >C10-C28
00 PD 32	0.0 RP 5.3 5.6	400 0.0 True Value QC RP 200 5.3 200 5.6	112 400 0.0 % Recovery True Value QC RP 103 200 5.3 93.3 200 5.6	448 112 400 0.0 BS % Recovery True Value QC RP 206 103 200 5.3 187 93.3 200 5.6	Method Blank BS % Recovery True Value QC RP ND 448 112 400 0.0 4 By: AB 488 112 400 0.0 Method Blank BS % Recovery True Value QC RP ND 206 103 200 5.3 ND 187 93.3 200 5.6	Analyzed Method Blank BS % Recovery True Value QC RP 06/15/2011 ND 448 112 400 0.0 Analyzed By: AB Analyzed Method Blank BS % Recovery True Value QC RP 06/16/2011 ND 206 103 200 5.0 06/16/2011 ND 187 93.3 200 5.0	Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RP 16.0 06/15/2011 ND 448 112 400 0.0 kg Analyzed By: AB Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RP 10.0 06/16/2011 ND 206 103 200 5.6 10.0 06/16/2011 ND 187 93.3 200 5.6	1220 16.0 06/15/2011 ND 448 112 400 0.0 mg/kg Analyzed By: AB Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RP <10.0

 Surrogate: 1-Chlorooctane
 78.0 %
 70-130

 Surrogate: 1-Chlorooctadecane
 92.2 %
 70-130

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RLSS NOTE: Likelity and Demoys. Contribution likelity and devices inclusive memory for any claim princip, whether besseld in contribut or likelity and Demoys. All comes, including those the property of the device included the state for including to the company of the contribution of the device including and of the device including and of the device including and of the contribution of the device including and of the device included and

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 7



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: Reported: Project Name:

Project Number:

Project Location:

06/10/2011 06/17/2011

VACUUM N-28-2 VENT NONE GIVEN

NOT GIVEN

Sampling Date:

Sampling Type:

Soil

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

06/09/2011

Sample ID: SB 6 @ 5' (H101214-04)

BTEX 8260B	mg/	kg	Analyze	d By: CMS			-		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	06/14/2011	ND	2.21	111	2.00	7.93	
Toluene*	<0.050	0.050	06/14/2011	ND	2.24	112	2.00	7.82	
Ethylbenzene*	< 0.050	0.050	06/14/2011	ND	2.32	116	2.00	8.13	
Total Xylenes*	<0.150	0.150	06/14/2011	ND	6.54	109	6.00	8.53	
Surrogate: Dibromofluoromethane	101 %	6 80-120							
Surrogate: Toluene-d8	105 9	% 80-120							
Surrogate: 4-Bromofluorobenzene	112 9	% 80-120							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	06/15/2011	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	06/16/2011	ND	206	103	200	5.32	
DRO >C10-C28	358	50.0	06/16/2011	ND	187	93.3	200	5.61	
Surrogate: 1-Chlorooctane	79.1 9	% 70-130					***************************************		
Surrogate: 1-Chlorooctadecane	76.8 9	% 70-130							

Cardinal Laboratories

*=Accredited Analyte

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Celux D. Kune

Celey D. Keene, Lab Director/Quality Manager

Page 4 of 7



Analytical Results For:

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

Fax To: (575) 397-1471

Received:

06/10/2011

Sampling Date:

06/09/2011

Reported: Project Name: 06/17/2011 VACUUM N-28-2 VENT Sampling Type: Sampling Condition: Soil Cool & Intact

Project Number: Project Location:

NONE GIVEN NOT GIVEN Sample Received By:

Jodi Henson

Sample ID: SB 6 @ 45' (H101214-05)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6240	16.0	06/15/2011	ND	448	112	400	0.00	
TPH 8015M	ang j	'kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/16/2011	ND	206	103	200	5.32	
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	187	- 93.3	200	5.61	
Surrogate: 1-Chlorooctane	76.2	% 70-130					-10		
Surrogate: 1-Chlorooctadecane	92.5	% 70-130							

Sample ID: SB 6 @ 65' (H101214-06)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2050	16.0	06/15/2011	ND	448	112	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/16/2011	ND	206	103	200	5.32	
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	187	93.3	200	5.61	
Surrogate: 1-Chlorooctane	80.6	% 70-130)						
Surrogate: LChlorooctadecane	100	% 70_130							

Cardinal Laboratories

*=Accredited Analyte

PERSE NOTE: Liability and Diamages. Cushand's blothly and clearly exclusive enough for any clean arriving, whether based in contract or outs, shall be limited to the amount good by dear for analysis. All claims, including those for registeric and any other cause whatcurer shall be deemed valved unless made in witting and received by Cardinal without thiny (30) days, there couldnot not be applicable service. In no event shall Control to lable for noticetal or conceptable compact, and any other cause which is a shall be controlled and or related to the performance of the services between the controlled and the controlled country of the store stated reasons or otherwise. Results related only to the samples identified above. This report shall not be reproduced except in full with written approval of Control Laboratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 5 of 7



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

PLACE MOTE: Libidity and Damages. Cardwards leights and clean's exclusive remotely for any clean arising, whether besed in content or but, shall be limited to the amount paid by clean for analyses. All cleans, including those for regispence and any other cases whitecome shall be determed whether sinks, made in winting and marked by Cardward within their, (30) days, after competition of the applicable service. In no event shall Customa be leade for incorrectal or corresponded damages, modules, whiteout limitation, butters interruptions, loss of use, or loss of profits incomed by cleans, to socialistic, shifteds or accuracy of a related to the performance of the services between the performance of the services between the such cleans to the control of the performance of the services between the such cleans to the control of the performance of the services between the performance of the services between the performance of the services.

Celey D. Keene, Lab Director/Quality Manager

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Page 6 of 7

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Project Manage	r: Hack Conder			_		P	.O. #:			Г					O.						
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City: Hobbs		State: NM	Zip:	882	40		ttn:			i				Cations/Anions	2			1	1		
Phone #: 575-3	393-9174	Fax #: 575-39	7-14	71			ddress:			1	ļ '	1		Ę	Thru						
Project #:		Project Owner				c	ity:			۱.,	Σ]	エ	//S			. 1		- 1	ļ	
Project Name: \	Vacuum N-28-2 Vent					s	tato:	Zip:		Chlorides	8015	×	인	G	Extended		. 1	İ	1		
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† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Page 7 of 7

NEED SAMPLES BACK, PLEASE



March 06, 2012

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM N-28-2 VENT

Enclosed are the results of analyses for samples received by the laboratory on 03/01/12 13:20.

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/ga/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. Keine

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

Page 1 of 5



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: Reported: 03/01/2012

03/06/2012

Project Name: Project Number: Project Location: VACUUM N-28-2 VENT NONE GIVEN NOT GIVEN Sampling Date:

Sampling Type: Sampling Condition: Sample Received By: 03/01/2012 Soil

Cool & Intact Jodi Henson

Sample ID: SB 7 @ SURFACE (H200548-01)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	15400	16.0	03/02/2012	ND	432	108	400	0.00	
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	03/03/2012	ND	192	96.2	200	3.12	
DRO >C10-C28	28.2	10.0	03/03/2012	ND	157	78.5	200	2.75	
Surrogate: 1-Chlorooctane	97.0	% 55.5-15	4						
Surrogate: 1-Chlorooctadecane	98.2	% 57.6-15	×						

Sample ID: SB 7 @ 10' (H200548-02)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4560	16.0	03/02/2012	ND	416	104	400	0.00	
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	03/05/2012	ND	206	103	200	15.5	
DRO >C10-C28	13.0	10.0	03/05/2012	ND	195	97.3	200	8.29	
Surrogate: 1-Chlorooctane	92.6	% 55.5-15	4						
Surrogate: 1-Chlorooctadecane	95.6	% 57.6-15	8						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liberity and Damages. Confinds's lability and client's exclusive remedy for any clean arising, whether based in contract or text, shall be limited to the amount paid by client for analysis. All clients, including those for negligence and any other cause whatsoever shall be deemed we've'd unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no evert shall Cardinal be labile for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successor arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims 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

Celey D. Keene, Lab Director/Quality Manager

Page 2 of 5

Analytical Results For:

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

Fax To: (575) 397-1471

Received:

03/01/2012

Sampling Date:

03/01/2012

Reported:

03/06/2012

Sampling Type:

Soil

Project Name:

VACUUM N-28-2 VENT

Sampling Condition:

Cool & Intact

Project Number: Project Location: NONE GIVEN NOT GIVEN

Sample Received By:

Jodi Henson

Sample ID: SB 7 @ 65' (H200548-03)

Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2480	16.0	03/02/2012	ND	432	108	400	0.00	
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	03/05/2012	ND	206	103	200	15.5	
DRO >C10-C28	<10.0	10.0	03/05/2012	ND	195	97.3	200	8.29	
Surrogate: 1-Chlorooctane	107 %	6 55.5-15	4						-
Surrogate: 1-Chlorooctadecane	1179	6 57.6-15	8						

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine Celey D. Keene, Lab Director/Quality Manager

Page 3 of 5



Notes and Definitions

3411	riigii surrogate recovery was committed as a matrix effect by a second analysis.
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: Lubbility and Damages. Curinar's labsity and client's exclusive remedy for any claim arising, whether based in contact or tor, shall be limited to the amount past by client for analyses. All clients, including those for negligence and any other cause whethorems that the defermed whether client interest to Constitute that the special services in no event shall Curinal in leade for incidental or consequential distinct in the special services. In no event shall Curinal in leade for incidental or consequential distinct in the special services. In no event shall Curinal in leade for incidental or consequential distinct in the special services. In no event shall Curinal in leade for incidental curinal services in the special services. In no event shall curinal be leaded for the special services. In services the special services in the special services in the special services. In no event shall curinal be serviced by client, it is obsidiated, as all services in the special services. In service, the special services in the special services in the special services. In no event services in the special services, in no event services in the special services. In no event services in the special services, in no event services in the special services. In no event services in the special services, in no event services in the services in the special services. In no event services in the

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Page 4 of 5

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 5 of 5

Texerra

Sampler - UPS - Bus - Other:

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476 #26



March 09, 2012

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM N-28-2 VENT

Enclosed are the results of analyses for samples received by the laboratory on 03/02/12 12:20.

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 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. Keine

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

Page 1 of 8



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: Reported: Project Name:

Project Number:

Project Location:

03/02/2012

03/09/2012

VACUUM N-28-2 VENT NONE GIVEN

NOT GIVEN

Sampling Date:

Sampling Type: Sampling Condition: Sample Received By: 03/02/2012

Soil

Cool & Intact Jodi Henson

Sample ID: SB 8 @ 25' (H200561-01)

BTEX 8021B	mg/	kg	Analyze	d By: AP					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/07/2012	ND	1.88	93.8	2.00	4.76	
Toluene*	0.077	0.050	03/07/2012	ND	2.04	102	2.00	4.10	
Ethylbenzene*	0.315	0.050	03/07/2012	ND	2.09	104	2.00	3.65	
Total Xylenes*	3.16	0.150	03/07/2012	ND	6.54	109	6.00	3.57	
Surrogate: 4-Bromofluorobenzene (PIL	159 %	64.4-13	4						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2920	16.0	03/05/2012	ND	432	108	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	214	50.0	03/06/2012	ND	195	97.4	200	24.4	
DRO >C10-C28	1510	50.0	03/06/2012	ND	196	98.2	200	16.7	
Surrogate: 1-Chlorooctane	124 %	6 55.5-15	4			***************************************	THE RESERVE TO THE PARTY OF THE		
Surrogate: 1-Chlorooctadecane	157 %	57.6-15	8						

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine Celey D. Keene, Lab Director/Quality Manager

Page 2 of 8



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 (575) 397-1471

Fax To:

Received: Reported: Project Name: 03/02/2012 03/09/2012

VACUUM N-28-2 VENT

Project Number: NONE GIVEN NOT GIVEN Project Location:

Sampling Date: Sampling Type: 03/02/2012 Soil

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

Sample ID: SB 8 @ 40' (H200561-02)

BTEX 8021B	mg/	kg	Analyze	d By: AP					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	03/07/2012	ND	1.88	93.8	2.00	4.76	
Toluene*	0.059	0.050	03/07/2012	ND	2.04	102	2.00	4.10	
Ethylbenzene*	0.223	0.050	03/07/2012	ND	2.09	104	2.00	3.65	
Total Xylenes*	1.52	0.150	03/07/2012	ND	6.54	109	6.00	3.57	
Surrogate: 4-Bromofluorobenzene (PIL	139	% 64.4-13	4						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Chloride	2960	16.0	03/05/2012	ND	432	108	400	3.77	
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	134	50.0	03/06/2012	ND	195	97.4	200	24.4	
DRO >C10-C28	840	50.0	03/06/2012	ND	196	98.2	200	16.7	
Surrogate: 1-Chlorooctane	114 9	% 55.5-15	4			. • •••••••••••••••••••••••••••••••••••			
Surrogate: 1-Chlorooctadecane	133 9	% 57.6-15	o						

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine Celey D. Keene, Lab Director/Quality Manager

Page 3 of 8

Texerra

41



Analytical Results For:

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

Fax To: (575) 397-1471

Received: Reported: 03/02/2012 03/09/2012

VACUUM N-28-2 VENT

Project Name: Project Number: Project Location:

NONE GIVEN NOT GIVEN

103 %

110%

55.5-154

57.6-158

Sampling Date:

Sampling Type: Sampling Condition: Sample Received By: 03/02/2012 Soil

Cool & Intact Jodi Henson

Sample ID: SB 8 @ 65' (H200561-03)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/07/2012	ND	1.85	92.4	2.00	13.7	
Toluene*	<0.050	0.050	03/07/2012	ND	2.02	101	2.00	13.5	
Ethylbenzene*	0.056	0.050	03/07/2012	ND	2.07	103	2.00	13.1	
Total Xylenes*	0.248	0.150	03/07/2012	ND	6.52	109	6.00	12.4	
Surrogate: 4-Bromofluorobenzene (PIL	127 9	% 64.4-13	4						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2400	16.0	03/05/2012	ND	432	108	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	23.3	10.0	03/06/2012	ND	195	97.4	200	24.4	
DRO >C10-C28	283	10.0	03/06/2012	ND	196	98.2	200	16.7	

Cardinal Laboratories

Surrogate: 1-Chlorooctane

Surrogate: 1-Chlorooctadecane

*=Accredited Analyte

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 4 of 8

Texerra

42



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received: 03/02/2012

Reported: Project Name: Project Number:

Project Location:

03/09/2012 VACUUM N-28-2 VENT

NONE GIVEN NOT GIVEN

Sampling Date: Sampling Type:

Sampling Condition:

03/02/2012 Soil Cool & Intact Jodi Henson

Sample Received By:

Sample ID: SB 9 @ 10' (H200561-04)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4960	16.0	03/05/2012	ND	432	108	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	03/07/2012	ND	164	82.1	200	5.85	
DRO >C10-C28	<10.0	10.0	03/07/2012	ND	219	110	200	5.58	
Surrogate: 1-Chlorooctane	91.6	% 55.5-15	4	*					
Surrogate: 1-Chlorooctadecane	104	% 57.6-15	8						

Sample ID: SB 9 @ 65' (H200561-05)

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	03/05/2012	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Anaiyze	đ By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/07/2012	ND	164	82.1	200	5.85	
DRO >C10-C28	<10.0	10.0	03/07/2012	ND	219	110	200	5.58	
Surrogate: 1-Chlorooctane	98.3	% 55.5-15	4						
Surrogate: 1-Chlorooctadecane	107	% 57.6-15	8						

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine Celey D. Keene, Lab Director/Quality Manager

Page 5 of 8

Texerra 43



Analytical Results For:

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

Fax To: (575) 397-1471

Received: Reported:

Project Location:

03/02/2012

03/09/2012 VACUUM N-28-2 VENT

Project Name: Project Number:

NONE GIVEN NOT GIVEN

Sampling Date: Sampling Type:

Soil

Sampling Condition: Sample Received By: 03/02/2012

Cool & Intact

Jodi Henson

Sample ID: SB 10 @ 50' (H200561-06)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4320	16.0	03/05/2012	ND	432	108	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	03/08/2012	ND	224	112	200	6.30	
DRO >C10-C28	22.2	10.0	03/08/2012	ND	184	91.8	200	2.48	
Surrogate: 1-Chlorooctane	105	% 55.5-15	4		,,				
Surrogate: 1-Chlorooctadecane	110	% 57.6-15	8						

Sample ID: SB 10 @ 65' (H200561-07)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1120	16.0	03/05/2012	ND	432	108	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	03/08/2012	ND	224	112	200	6.30	
DRO >C10-C28	13.0	10.0	03/08/2012	ND	184	91.8	200	2.48	
Surrogate: 1-Chlorooctane	116	% 55.5-15	4						
Surrogate: 1-Chlorooctadecane	114	% 57.6-15	8						

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*=Accredited Analyte

Celey D. Keine Celey D. Keene, Lab Director/Quality Manager

Page 6 of 8

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44



Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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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*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Curdinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whotoscere shall be deemed winded unless made in writing and received by Curdinal within thirty (30) days after completion of the applicable service. In no event shall Curdinal be liable for incidernal or consequential damages including, which contains the

Celey D. Keene, Lab Director/Quality Manager

Page 7 of 8

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CHAIN-OF-CUSTODY AND 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: Mice									ANALYSIS REQUEST																
Project Manager: Hack Conder								F	P.O. #:																
Address:								c	Company:									8							
City: Hobbs State: NM Zip: 88240								1	Attn:									Cations/Anions	1						
Phone #: Fax #:									Address:									<u> </u>							
Project #: Project Owner:									City:					٦,	≥		I	1/8							
Project Name:								s	State: Zip:					ĕ	5	×	0	1 8							
Project Location: Value N-28-2 Vant 175-366								F	Phone #:] ·은	Š	ώ.	S	黃	TDS]					
Sampler Name: Kyle Norman									Fax #:					Chlorides	1 8	BTEX	Texas TPH	Ö	F	1					
FOR LAB USE ONLY				П	MATRIX			PRESERV. SAMPL			NG	<u> </u>	TPH 8015		<u>@</u>	te									
Lab I.D. <u>H20056</u> 1	Sample I.D.			# CONTAINERS	GROUNDWATER	SOIL	OIL OIL	SLUDGE	OTHER:	ICE / COOL	отнек:	DATE	TIME					Complete							
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PLEASE NOTE: Liability and Damages, Cardinal's liability and client's excitative remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other course whatsoever shall be deemed witherd unless mode in vesting and received by Cardinal within 30 days after completion of the applicable service. In no event shall cardinal be liabile to incidental or consequental damages, including without intration, business interruptions, loss of use, or loss of profits incurred by client, it is substituties affailates or successors arising out of or relates to the performance of services hereunder by Cardinal, regarders or whether such claims in based upon any of the above stated releases on a or otherwise.																									
Reclinquished By: Date: 3-2-72 Received By:							le	MADN				Phone Re Fax Resu REMARK	esult: ☐ Yes Ø No Add'l Fax#:												
Relinquished By: Date: Received By:														results: zconder@rice-ecs.com											
Time:														orman@rice-ecs.com; lpena@riceswd.com											
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Sampler - UPS - Bus - Other: Cool Intact								res No		_/		jals)	hcond	conder@rice-ecs.com; Lweinheimer@rice-ecs.com											

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

Page 8 of 8

Hansen, Edward J., EMNRD

From: Laura Pena < lpena@riceswd.com>

Sent: Wednesday, May 09, 2012 11:41 AM

To: Hansen, Edward J., EMNRD

Cc: Hack Conder; Katie Jones; L Peter Galusky Jr

Subject: Vacuum N-28 vent, jct. N-28-1, and N-28-2 vent Plats

Attachments: Vacuum N-28 vent and N-28-1 ALL SB data and Proposed Liner 5-9-12.jpg; Vacuum

N-28 vent, N-28-2 vent and N-28-1 OUTSIDE SB DATA 5-9-12.jpg

Mr. Hansen,

Attach are the plats for Vacuum N-28 vent (1R425-85), Jct. N-28-1 (1R425-87), and N-28-2 vent (1R425-86) as discussed during the May 1, 2012 meeting between NMOCD and Rice Operating Company.

- One plat depicts the relationship of N-28 vent and jct. N-28-1 to each other with soil data and the proposed liner
- The other plat depicts all 3 sites and the relationships between them with all outside soil data.

If you have any questions or require more information, please do not hesitate to contact Hack Conder at (575) 631-6432.

Thank you, Laura Peña

