

1R - 426-09

REPORTS

DATE:

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TETRA TECH

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CERTIFIED MAIL
RETURN RECEIPT NO. 7008 3230 0001 9310 9178

August 6, 2012

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

Re: Corrective Action Plan (CAP) Report and Termination Request, Rice Operating Company, Blinebry Drinkard (BD) Saltwater Disposal System (SWD) H-19 Vent, Unit H, Section 19, T-21-S, R-37-E, Lea County, New Mexico, NMOCD CASE #1R0426-09

Mr. Hansen:

On behalf of Rice Operating Company (ROC), Tetra Tech Inc. (Tetra Tech) submits the following CAP report and Request for Termination for the Blinebry Drinkard (BD) Saltwater Disposal System (SWD) H-19 Vent. ROC is the service provider (agent) for the Blinebry Drinkard SWD System and has no ownership of any portion of the pipeline, well or facility. The BD SWD system is owned by a consortium of oil producers, Systems Parties, who provide all operating capital on a percentage ownership/usage basis.

BACKGROUND & PREVIOUS WORK

As part of the ROC Junction Box Upgrade work plan, starting on July 14, 2003, the H-19 was moved 25 feet to the northwest. The former junction box site was investigated vertically and horizontally with a trench utilizing a backhoe. The site was delineated to 12 feet below ground surface (bgs) and found to be impacted with chlorides. The site was then backfilled and contoured to the surrounding topography. In order to vertically delineate the site, one soil boring was drilled within the excavated site to a depth of 90 feet bgs on April 4, 2008. The soils were found to be impacted to that depth with chlorides. At that time, one monitor well was installed southeast of the excavated junction box at a depth of 133 feet bgs, to determine if groundwater had been impacted. Analytical

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



results indicate the well has chloride concentrations ranging from 444 milligrams per liter (mg/L) to 560 mg/L. See Figures 1 and 2 for site location.

In order to complete delineation of the impacted soils at the site, ROC completed nine additional borings in and around the former junction box to depths of 60 feet bgs between February 25, 2010 and March 23, 2011. Analytical results showed a decrease in chloride concentrations with depth with both vertical and horizontal delineation.

In April 2010, two additional monitor wells were installed at the site in order to complete delineation of the chlorides within the groundwater. Up-gradient monitor well MW-2 has shown an average chloride concentration of 220 mg/L, indicating some up-gradient regional impairment when compared to down-gradient MW-3 which has an average chloride concentration of 67 mg/L. No BTEX constituents have ever been detected in any of the monitor well sampling events.

A CAP was submitted to the NMOCD on January 5, 2011 with an addendum to the CAP submitted on April 11, 2011. The CAP, which was approved by the NMOCD on April 13, 2011, proposed the installation of a 20-mil polyethylene liner at a depth of 4 feet bgs with measurements of 65 feet by 70 feet. In addition, with the impacted groundwater up-gradient at the site indicating a regional impact, a chloride mass calculation removal of 13,405 gallons or 355 kilograms (kg) was proposed for the site. Since there is a relatively negligible impact to monitor well MW-1, the water was to be pumped from recovery systems located at the nearby sites BD O-23 vent and BD O-23-1.

CAP IMPLEMENTATION AND COMPLETION

As per the approved CAP and addendum, dated January 5 and April 11, 2011, ROC was onsite between April 26 and June 15, 2012 to oversee the site field activities. As part of the activities, an area measuring approximately 70 feet by 65 feet by 5 feet deep was excavated in the vicinity of the former junction box. Upon completion of the excavation, a 6-inch layer of clean sand was backfilled within the area prior to placement of a 20-mil polyethylene liner of the same measurements. See Figure 3 for liner location and dimensions. Once the liner was installed at 4.5 feet bgs, a second 6-inch layer of clean sand was placed over the liner. Above the sand was placed 3 feet of clean caliche and capped with 1 foot of sand. A laboratory sample of the imported caliche and imported blow sand returned a chloride concentration result of 64 mg/kg in the imported caliche and a chloride concentration result of 16 mg/kg in the imported blow sand (See Appendix A). The top layer of sand was then contoured to match the surrounding topography, amendments were added and the soils seeded with a mixture of Race Horse Oats and Lea County Seed Mix. See Photographs for site restoration activities. Approximately 1,040 cubic yards of chloride impacted soils were transported offsite for disposal at a NMOCD approved facility.

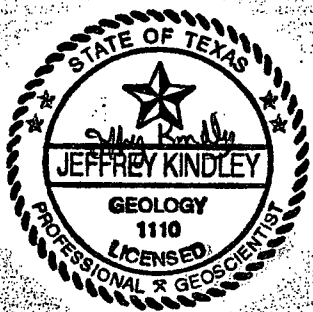


TETRA TECH

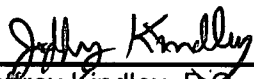
As proposed and approved by the NMOCD, ROC was onsite between July 16 and July 18, 2012 to extract chloride impacted groundwater from the BD O-23 vent and the BD O-23-1 recovery systems. During that time, approximately 490 barrels (20,580 gallons) or 508 kilograms of chloride impacted groundwater were removed from the recovery systems and utilized for pipeline and well maintenance. From BD O-23 vent RW-1, a total of 115 barrels was extracted from the aquifer. Given that the BD O-23 vent RW-1 had a chloride concentration of 6,900 mg/L, a total of 126 kg of chloride was removed. From BD O-23 vent RW-2, a total of 115 barrels was extracted. Given that BD O-23 vent RW-2 had a chloride concentration of 10,300 mg/L, a total of 188 kg of chloride was removed. From the BD O-23-1 vent RW-1 had a chloride concentration of 4,400 mg/L, a total of 90 kg of chloride was removed. From the BD O-23-1 vent RW-2 had a chloride concentration of 5,050 mg/L, a total of 104 kg of chloride was removed. See Appendix A for analytical results from recovery wells.

Based on the completion activities performed at the site, ROC acknowledges they have met the requirements of 19.15.30 NMAC and respectfully requests termination of this regulatory file. Upon NMOCD approval of this Termination Request, all monitor wells (MW-1, MW-2 and MW-3) will be plugged using a cement grout with 1% to 3% bentonite and a 3-foot cap of cement to the surface. Upon completion of these activities, a Monitor Well Plugging Report and Seeding Documentation will be submitted to the NMOCD.

If you have any questions or comments regarding the above Termination Request, please do not hesitate to contact us at (432) 682-4559 or Hack Conder of ROC at (575) 393-9174.



Respectfully Submitted,
Tetra Tech, Inc.



Jeffrey Kindley, P.G.
Senior Project Manager

cc: Hack Conder – ROC
Enclosures: Figures, Photographs, Laboratory Results

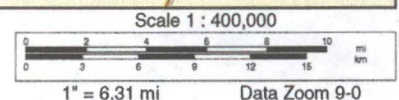
FIGURES



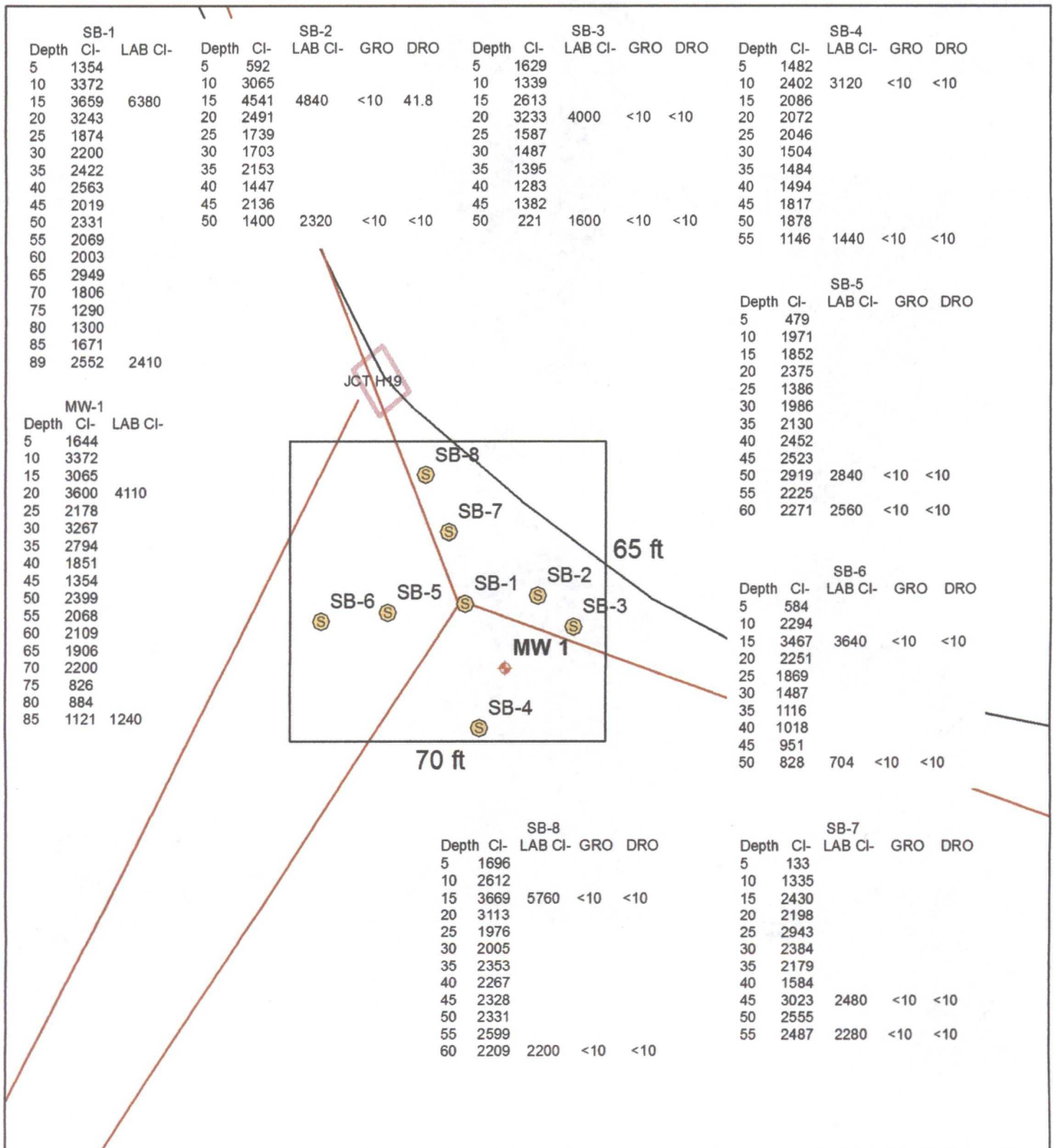
Data use subject to license.

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Soil Bore Information and Proposed Infiltration Barrier

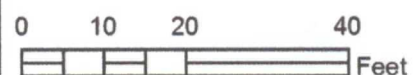


BD H-19 vent

Legals: UL/H sec. 19
T21S R37E
NMOCD Case #: 1R426-09

Figure 3

Liner Dimensions



Drawing date: 10-7-10
Drafted by: L. Weinheimer

PHOTOGRAPHS

**BD H-19 vent (1R426-09)
Unit H, Section 19, T21S, R37E**



Exporting soil, facing northeast 4/26/12



Exporting soil, facing east 4/26/2012



Excavating site, facing east 4/26/2012



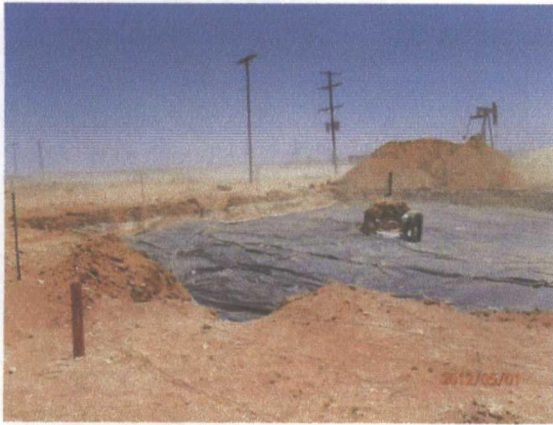
Completed excavation, facing northeast
4/30/2012



Importing sand, facing southeast 4/30/2012



Installed bottom 6" sand pad, facing northeast
4/30/2012



Installing a 70' x 65', 20-mil reinforced liner at 4.5' bgs, facing southeast 5/1/12



Installing 6" sand pad above liner, facing northeast 5/1/2012



Backfilling site with caliche up to 1' bgs, facing northwest 5/2/2012



Backfilling site from 1' bgs to ground surface with sand, facing northeast 5/2/2012



Spreading amendments, facing north 6/15/2012



Seeding site, facing north 6/15/2012

APPENDIX A

ANALYTICAL RESULTS

May 02, 2012

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

RE: BD H-19 VENT

Enclosed are the results of analyses for samples received by the laboratory on 04/30/12 16:35.

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_accred_certif.html.

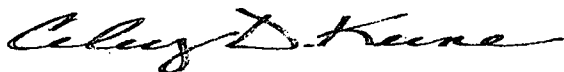
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/30/2012
Reported: 05/02/2012
Project Name: BD H-19 VENT
Project Number: NOT GIVEN
Project Location: T21S R37E SEC19 H - LEA CTY., NM

Sampling Date: 04/30/2012
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson

Sample ID: IMPORTED BLOW SAND (H200986-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	05/02/2012	ND	432	108	400	3.77	

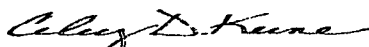
Sample ID: IMPORTED CALICHE (H200986-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	05/02/2012	ND	432	108	400	3.77		

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

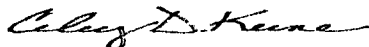
Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

Company Name: <u>Rice</u>		BILL TO		ANALYSIS REQUEST																							
Project Manager:		P.O. #:																									
Address:		Company:																									
City: State: Zip:		Attn:																									
Phone #: Fax #:		Address:																									
Project #: Project Owner:		City:																									
Project Name:		State: Zip:																									
Project Location: <u>RD H-19 Vent</u>		Phone #:																									
Sampler Name: <u>J Kamplain</u>		Fax #:																									
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.	SAMPLING																
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL													OTHER:	DATE	TIME
	<u>H200986</u>	<u>Imported Blau Sand</u>	<u>9</u>	<u>1</u>			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>														<u>4-30-12</u>	<u>10:50</u>
		<u>Imported Caliche</u>	<u>9</u>	<u>1</u>			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>														<u>4-30-12</u>	<u>1:50</u>

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Relinquished By: <u>[Signature]</u>	Date: <u>4-30-12</u> Time: <u>4:35</u>	Received By: <u>Jodi Benson</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:			REMARKS: <u>Hack; Zach; Bruce; Lara;</u> <u>Jkamplain @ Rice-ecs.com</u>
Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CHECKED BY: <u>[Signature]</u>	

June 26, 2012

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD O-23 VENT

Enclosed are the results of analyses for samples received by the laboratory on 06/21/12 15:45.

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_accred_certif.html.

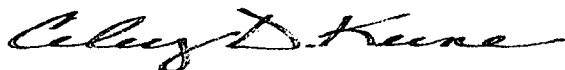
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 06/21/2012
Reported: 06/26/2012
Project Name: BD O-23 VENT
Project Number: NONE GIVEN
Project Location: T21S R37E SEC23 O-LEA CTY., NM

Sampling Date: 06/21/2012
Sampling Type: Water
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL 1-R (H201420-01)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	6900	4.00	06/26/2012	ND	100	100	100	0.00	

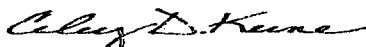
Sample ID: RECOVERY WELL 2 (H201420-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	10300	4.00	06/26/2012	ND	100	100	100	0.00	

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

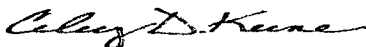
*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

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

#26



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

June 26, 2012

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD O-23-1

Enclosed are the results of analyses for samples received by the laboratory on 06/21/12 15:45.

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Method EPA 524.4	Regulated VOCs (V1, V2, V3)

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 06/21/2012
Reported: 06/26/2012
Project Name: BD O-23-1
Project Number: NOT GIVEN
Project Location: T21S R37E SEC23 O-LEA CTY., NM

Sampling Date: 06/21/2012
Sampling Type: Water
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson

Sample ID: MW 1-R (H201421-01)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	4400	4.00	06/26/2012	ND	100	100	100	0.00	

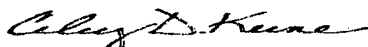
Sample ID: RW-2 (H201421-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	5050	4.00	06/26/2012	ND	100	100	100	0.00	

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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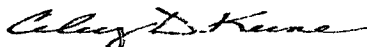
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Celey D. Keene, Lab Director/Quality Manager

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

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