

AP - 27

ANNUAL MONITORING REPORT

YEAR(S):

2010



TETRA TECH

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March 25, 2011

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: 2010 Annual Groundwater Summary Report & Project Status Report, Rice Operating Company, E-15 Release, BD SWD System, Unit D&E, Section 15, T-22-S, R-37-E, Lea County, New Mexico, NMOCD CASE #AP-027

Mr. Hansen:

Tetra Tech Inc. (Tetra Tech) submits the following 2010 Annual Groundwater Summary Report for the Rice Operating Company (ROC), E-15 Release, located in the BD Salt Water Disposal System. This report consists of the following sections:

1. A figure presenting the location of the monitoring wells and most recent groundwater sampling results.
2. Tables summarizing all laboratory results and depths to groundwater at the site, including the current year (2010).
3. Graphs depicting the concentration of chlorides, total dissolved solids (TDS), and sulfates over time.
4. Laboratory results for the most recent groundwater sampling event.

In 2005, a groundwater remediation system was installed at the site to address the chloride impacts to the groundwater. Due to low volumes, silting, and equipment problems, the system was discontinued in 2007. Several of the silted or dry monitor wells were permanently abandoned. Since 2005, the four active monitor wells (MW-1 through MW-4) have been sampled on a quarterly basis. On January 6, 2011, ROC submitted a work plan detailing the installation of three additional monitor wells at the site (2 of which are temporary wells adjacent to currently dry wells) in order to further delineate groundwater quality and to determine if groundwater exists throughout the entire site. If the two wells to be installed adjacent to the current dry wells are also dry, they will be plugged and abandoned after 48 hours of installation. The work plan was approved via email by the NMOCD on February 17, 2011. For 2011, the three proposed monitor wells will be installed and the site will continued to be monitored and sampled on a quarterly basis.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

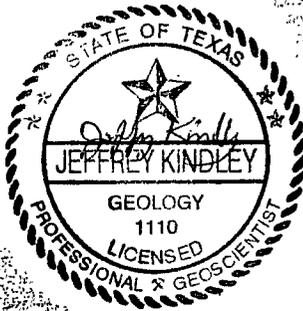
Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



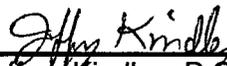
TETRA TECH

ROC is the service provider (agent) for the BD Salt Water Disposal 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, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Thank you for your consideration of this annual summary information. If you have any questions, please contact me at (432) 682-4559, or Hack Conder of ROC at (575) 393-9174.



Respectfully Submitted,
Tetra Tech, Inc.



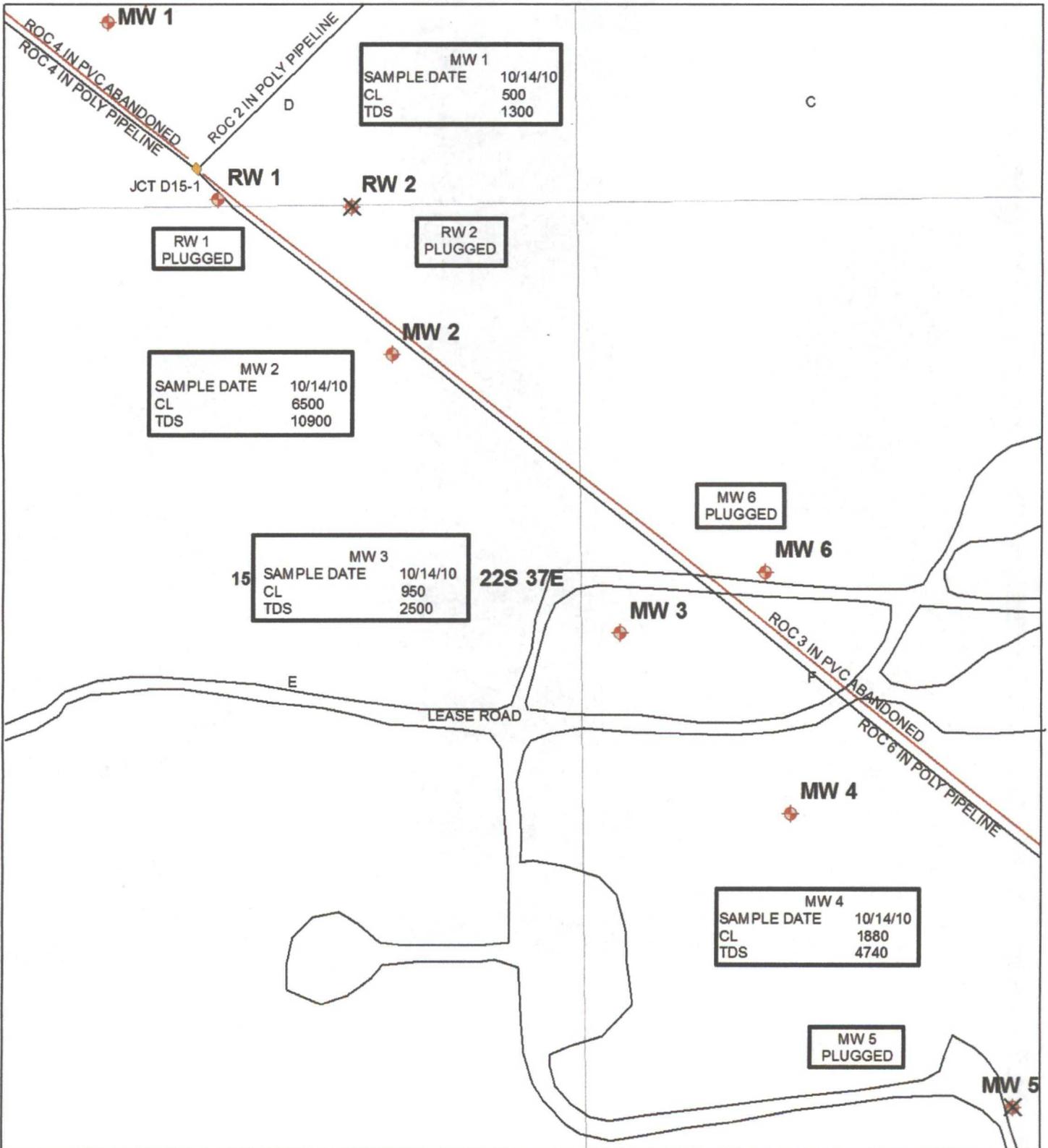
Jeffrey Kindley, P.G.
Senior Project Manager

cc: Hack Conder –ROC

Enclosures: Figure, Tables, Graphs, and Lab Results

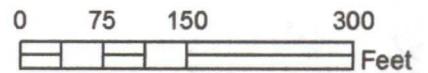
FIGURES

MW SAMPLING DATA



BD E-15 LEAK
Legals: UL E SEC 15
T-22-S R-37-E

Case #: AP 27



Drawing date: 3/9/11
Drafted by: T. GRIECO

TABLES

Graph 1
Rice Operating Company
MW-1
BD E-15
Lea County, New Mexico

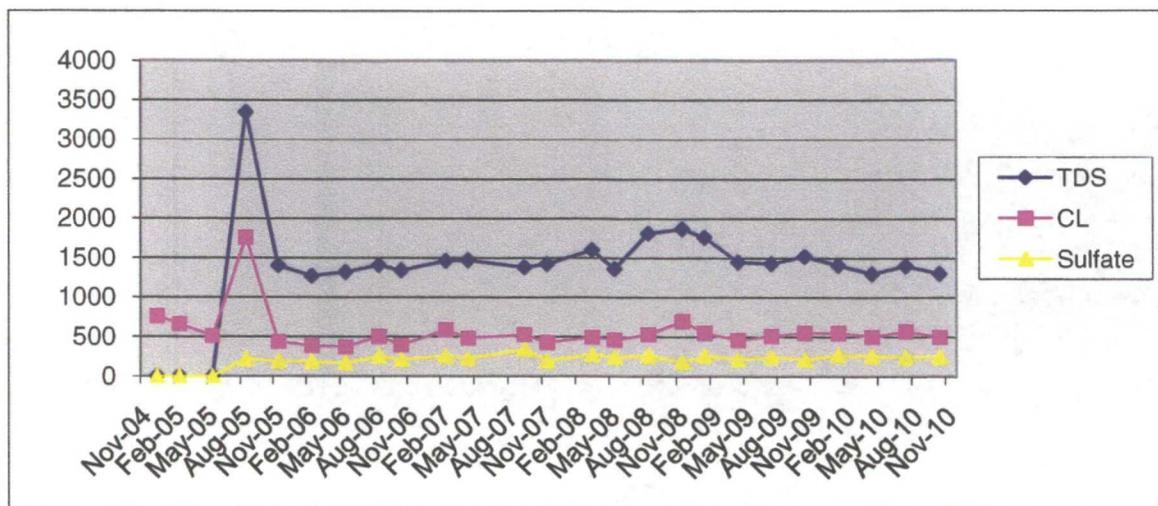
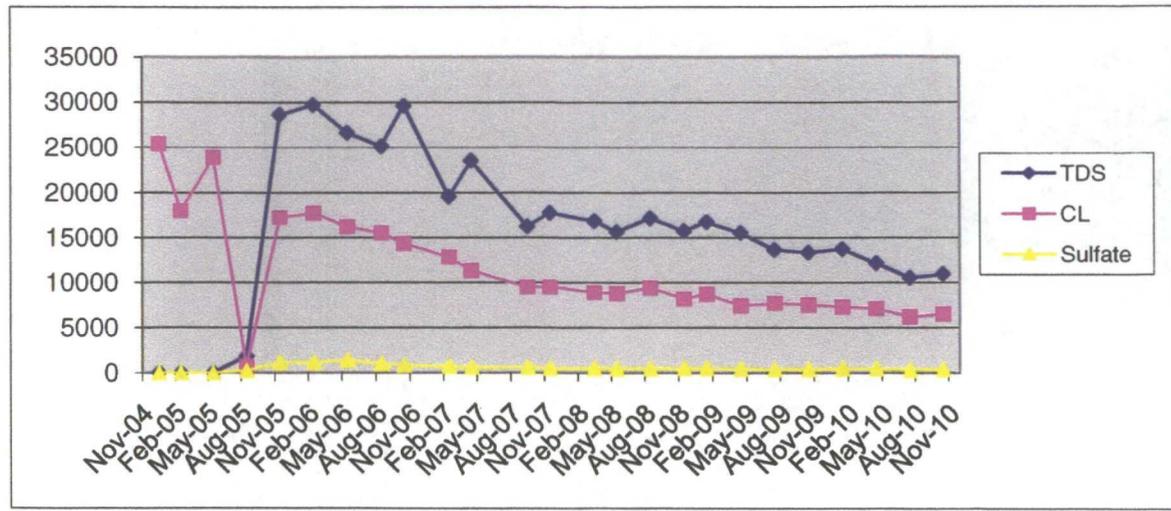


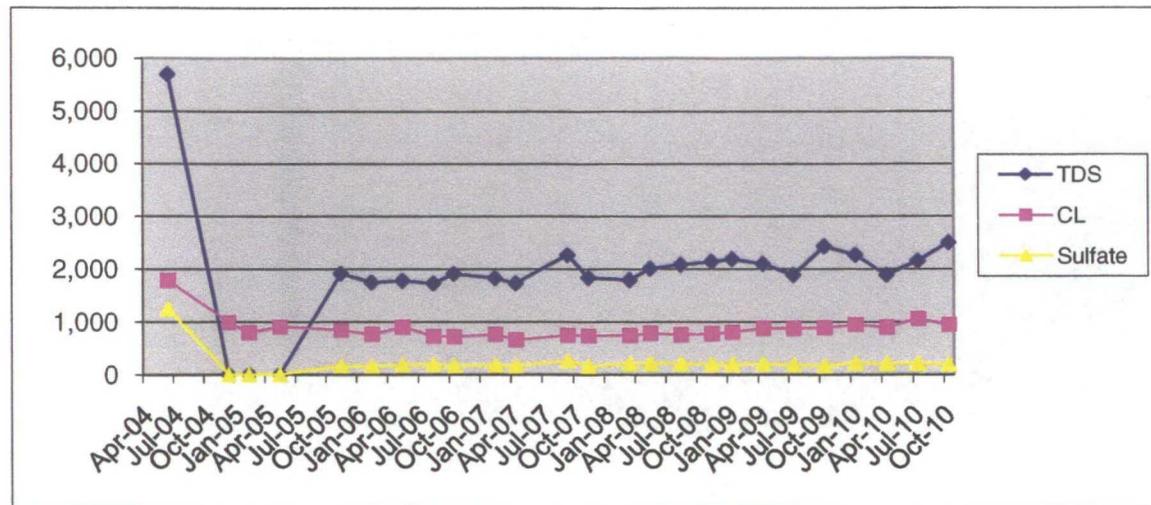
Table 2
Rice Operating Company
BD E-15
Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl mg/L	TDS mg/L	Benzene mg/L	Toluene mg/L	EthylBenzene mg/L	Total Xylenes mg/L	Sulfate mg/L	Comments
2	xxx	xxx	xxx	xxx	12/30/04	25,400	xxx	xxx	xxx	xxx	xxx	xxx	xxx
2	xxx	xxx	xxx	xxx	02/11/05	18,000	xxx	xxx	xxx	xxx	xxx	xxx	xxx
2	xxx	xxx	xxx	xxx	05/01/05	23,900	xxx	xxx	xxx	xxx	xxx	xxx	xxx
2	xxx	xxx	xxx	xxx	08/30/05	676	1,810	<0.001	<0.001	<0.001	<0.001	229	xxx
2	76.45	86.75	1.60	6	11/08/05	17,200	28,600	0.00116	<0.001	<0.001	<0.001	1140	xxx
2	76.33	86.57	1.70	6	02/07/06	17,700	29,700	<0.001	<0.001	<0.001	<0.001	1140	xxx
2	76.38	86.75	1.70	10	05/09/06	16,200	26,600	<0.001	<0.001	<0.001	<0.001	1380	xxx
2	76.44	86.75	1.60	10	08/29/06	15,500	25,100	<0.001	<0.001	<0.001	<0.001	986	Red color
2	76.45	86.75	1.60	69	10/26/06	14,300	29,600	<0.001	<0.001	<0.001	<0.001	801	Red color
2	xxx	xxx	xxx	xxx	02/12/07	12,800	19,500	<0.001	<0.001	<0.001	<0.001	691	xxx
2	76.44	87.40	1.80	7	04/24/07	11,300	23,500	<0.001	<0.001	<0.001	<0.001	588	Clear/no odor
2	xxx	xxx	xxx	xxx	09/24/07	9,497	16,202	<0.002	<0.002	<0.002	<0.006	605	Clear/no odor
2	xxx	xxx	xxx	xxx	11/30/07	9,500	17,709	<0.002	<0.002	<0.002	<0.006	484	Clear/no odor
2	xxx	xxx	xxx	xxx	03/07/08	8,900	16,800	<0.001	<0.001	<0.001	<0.003	483	Clear/no odor
2	76.62	86.41	1.60	8	05/30/08	8,800	15,600	<0.002	<0.002	<0.002	<0.006	464	Clear/no odor
2	76.59	86.41	1.60	8	08/11/08	9,400	17,100	<0.001	<0.001	<0.001	<0.003	440	Clear/no odor
2	76.72	86.41	1.60	8	11/14/08	8,200	15,700	<0.001	<0.001	<0.001	<0.003	475	Clear/no odor
2	76.59	86.42	1.60	8	01/22/09	8,700	16,700	<0.001	<0.001	<0.001	<0.003	481	Clear/no odor
2	76.63	86.42	1.60	8	04/23/09	7,400	15,500	<0.001	<0.001	<0.001	<0.003	436	Clear/no odor
2	76.68	86.42	1.60	8	07/17/09	7,700	13,600	<0.001	<0.001	<0.001	<0.003	384	Clear/no odor
2	76.91	86.42	1.50	8	10/14/09	7,500	13,300	<0.001	<0.001	<0.001	<0.003	380	Clear/no odor
2	76.63	86.85	1.60	8	01/21/10	7,300	13,700	<0.001	<0.001	<0.001	<0.003	456	Clear/no odor
2	76.66	86.85	1.60	8	04/14/10	7,100	12,100	<0.001	<0.001	<0.001	<0.003	445	Clear/no odor
2	76.67	86.85	1.60	8	07/19/10	6,200	10,500	<0.001	<0.001	<0.001	<0.003	320	Clear/no odor
2	76.65	86.85	1.60	8	10/14/10	6,500	10,900	<0.001	<0.001	<0.001	<0.003	385	Clear/no odor

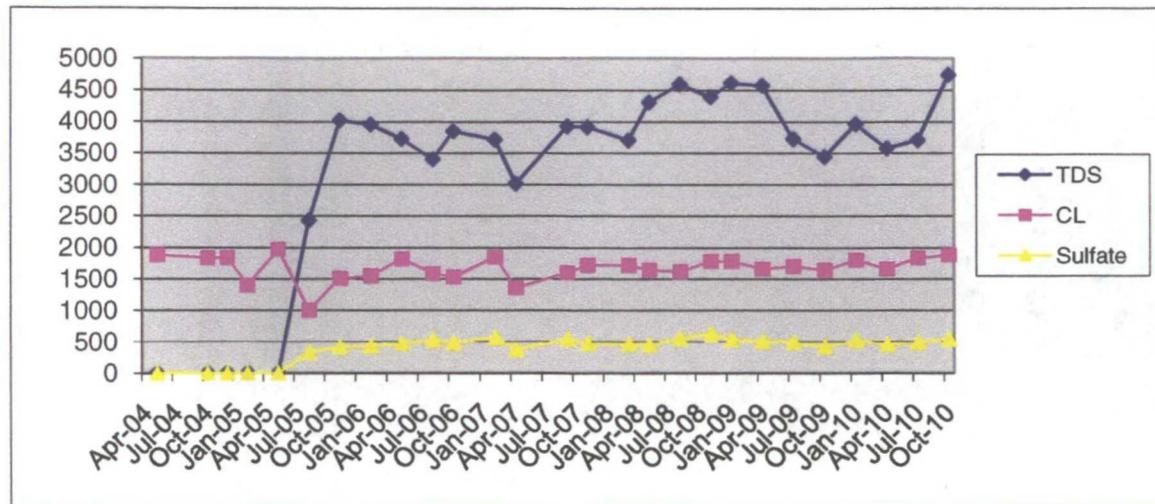
Graph 2
Rice Operating Company
MW-2
BD E-15
Lea County, New Mexico



Graph 3
Rice Operating Company
MW-3
BD E-15
Lea County, New Mexico



Graph 4
Rice Operating Company
MW-4
BD E-15
Lea County, New Mexico



APPENDIX A

October 28, 2010

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

RE: BD E-15 LEAK

Enclosed are the results of analyses for samples received by the laboratory on 10/19/10 10:40.

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 Hydrocarbons

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

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 (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:	10/19/2010	Sampling Date:	10/14/2010
Reported:	10/28/2010	Sampling Type:	Water
Project Name:	BD E-15 LEAK	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T22S-R37E-SEC15E - LEA CTY., NM		

Sample ID: MONITOR WELL #1 (H021097-01)

BTEX 8021B		mg/L		Analyzed By: cms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.001	0.001	10/21/2010	ND	0.055	109	0.0500			
Toluene*	<0.001	0.001	10/21/2010	ND	0.051	103	0.0500			
Ethylbenzene*	<0.001	0.001	10/21/2010	ND	0.052	104	0.0500			
Total Xylenes*	<0.003	0.003	10/21/2010	ND	0.161	107	0.150			

Surrogate: 4-Bromofluorobenzene (PIL) 103 % 80-120

Chloride, SM4500CI-B		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	500	4.00	10/21/2010	ND	108	108	100	3.77		

Sulfate 375.4		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate	243	10.0	10/20/2010	ND	37.8	94.5	40.0	4.75		

TDS 160.1		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS	1300	5.00	10/20/2010	ND				1.40		

Cardinal Laboratories

*=Accredited Analyte

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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: 10/19/2010
 Reported: 10/28/2010
 Project Name: BD E-15 LEAK
 Project Number: NONE GIVEN
 Project Location: T22S-R37E-SEC15E - LEA CTY., NM

Sampling Date: 10/14/2010
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #2 (H021097-02)

BTEX 8021B		mg/L		Analyzed By: cms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.001	0.001	10/22/2010	ND	0.055	109	0.0500			
Toluene*	<0.001	0.001	10/22/2010	ND	0.051	103	0.0500			
Ethylbenzene*	<0.001	0.001	10/22/2010	ND	0.052	104	0.0500			
Total Xylenes*	<0.003	0.003	10/22/2010	ND	0.161	107	0.150			

Surrogate: 4-Bromofluorobenzene (PIL) 99.1% 80-120

Chloride, SM4500Cl-B		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6500	4.00	10/21/2010	ND	108	108	100	3.77		

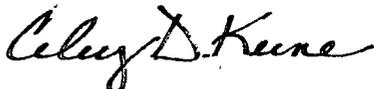
Sulfate 375.4		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate	385	10.0	10/20/2010	ND	37.8	94.5	40.0	4.75		

TDS 160.1		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS	10900	5.00	10/20/2010	ND				1.40		

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*=Accredited Analyte

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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:	10/19/2010	Sampling Date:	10/14/2010
Reported:	10/28/2010	Sampling Type:	Water
Project Name:	BD E-15 LEAK	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T22S-R37E-SEC15E - LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H021097-03)

BTEX 8021B		mg/L		Analyzed By: cms				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.001	0.001	10/27/2010	ND	0.055	109	0.0500			
Toluene*	<0.001	0.001	10/27/2010	ND	0.051	103	0.0500			
Ethylbenzene*	<0.001	0.001	10/27/2010	ND	0.052	104	0.0500			
Total Xylenes*	<0.003	0.003	10/27/2010	ND	0.161	107	0.150			

Surrogate: 4-Bromofluorobenzene (PIL) 121 % 80-120

Chloride, SM4500Cl-B		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	950	4.00	10/21/2010	ND	108	108	100	3.77		

Sulfate 375.4		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate	193	10.0	10/20/2010	ND	37.8	94.5	40.0	4.75		

TDS 160.1		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS	2500	5.00	10/20/2010	ND				1.40		

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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:	10/19/2010	Sampling Date:	10/14/2010
Reported:	10/28/2010	Sampling Type:	Water
Project Name:	BD E-15 LEAK	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T22S-R37E-SEC15E - LEA CTY., NM		

Sample ID: MONITOR WELL #4 (H021097-04)

BTEX 8021B		mg/L		Analyzed By: cms				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.001	0.001	10/27/2010	ND	0.055	109	0.0500			
Toluene*	<0.001	0.001	10/27/2010	ND	0.051	103	0.0500			
Ethylbenzene*	<0.001	0.001	10/27/2010	ND	0.052	104	0.0500			
Total Xylenes*	<0.003	0.003	10/27/2010	ND	0.161	107	0.150			

Surrogate. 4-Bromofluorobenzene (PIL) 123 % 80-120

Chloride, SM4500Cl-B		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1880	4.00	10/21/2010	ND	108	108	100	3.77		

Sulfate 375.4		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate	536	10.0	10/20/2010	ND	37.8	94.5	40.0	4.75		

TDS 160.1		mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS	4740	5.00	10/20/2010	ND				1.40		

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Celey D. Keene, Lab Director/Quality Manager

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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Celey D. Keene, Lab Director/Quality Manager

