

1R - 415

**ANNUAL GW
MONITOR REPORT**

**DATE:
2007**

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266.0745

RECEIVED

1R415
Annual GWM
Report
2007

January 24, 2008

Wayne Price
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

RE: 2007 Annual Ground Water Monitoring Report
G-1 Site (Abo Apache LA), Sec 01, T17S, R36E, Unit "G"
NMOCD Case #: 1R0415

Dear Mr. Wayne Price:

R.T. Hicks Consultants, Ltd is pleased to submit the 2007 Annual Ground Water Monitoring Report for the G-1 Site (Abo Apache LA) site located in the Abo Salt Water Disposal System (SWD). This report consists of the following sections:

1. A table summarizing all laboratory results, depth to ground water and other pertinent data associated with ground water sampling at the site, including this past year.
2. Graphs showing chemical concentration over time for chloride, TDS, and sulfate.
3. Laboratory data sheets associated with the routine sampling for 2007.

A Final Closure Report was submitted to NMOCD on April 28, 2006. NMOCD granted conditional approval on May 25, 2006. Revegetation and soil moisture monitoring is ongoing. We plan to submit a Final Closure Report in the spring of 2008.

Thank you for your consideration of this annual summary information. The attached CD contains an electronic copy of this report. If you have any questions, please contact us at 505-266-5004, or Kristin Farris Pope at ROC, 505-393-9174.

Sincerely,
R.T. Hicks Consultants, Ltd.



Randall T. Hicks
Principal

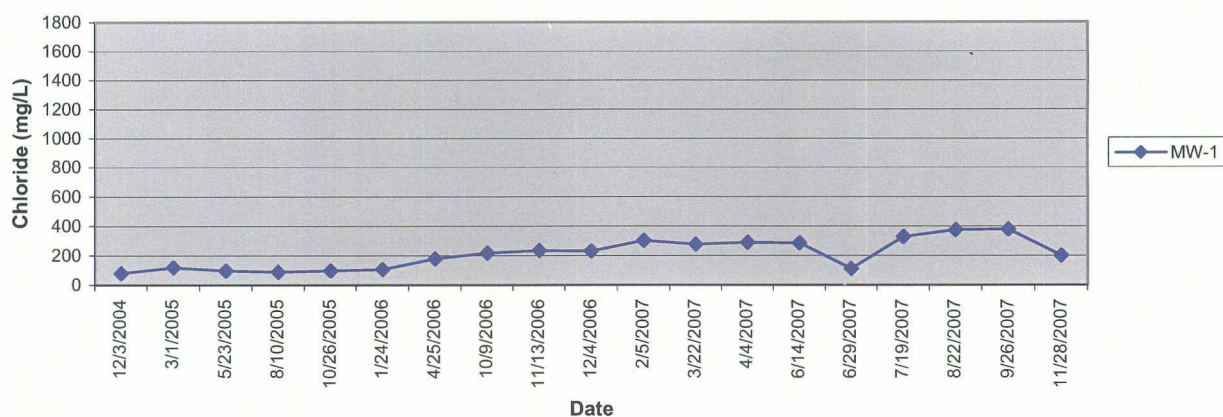
Copy: Hobbs NMOCD office; Rice Operating Company

G-1 Site (Abo Apache LA)

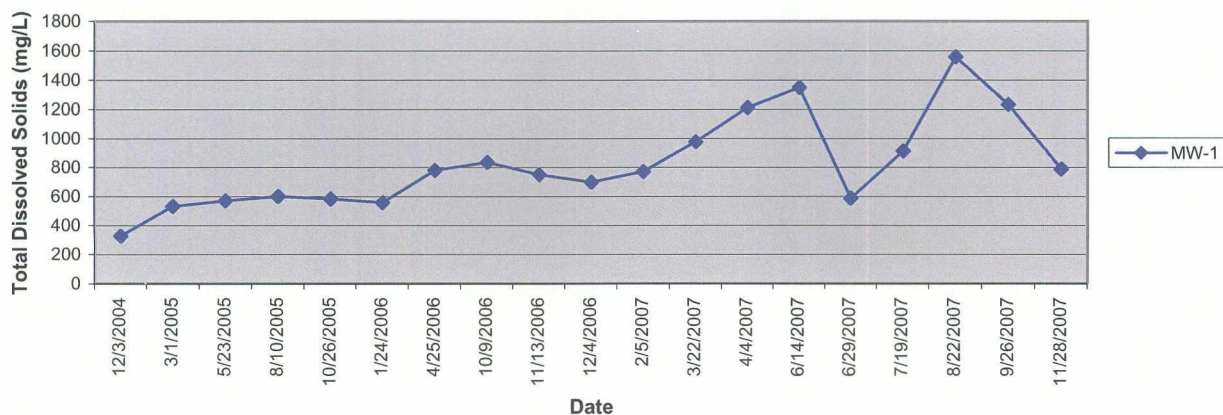
Table 1: chemistry over time

Well Name	Date	DTW (ft)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	EthylBenzene (mg/L)	Total Xylenes (mg/L)	Comments
MW-1	12/3/2004	92.10	80.5		329	<0.001	<0.001	<0.001	<0.001	
MW-1	3/1/2005	92.10	120		532	<0.001	<0.001	<0.001	<0.001	
MW-1	5/23/2005	92.30	98.4		573	<0.001	<0.001	<0.001	<0.001	
MW-1	8/10/2005	92.60	91.5		603	<0.001	<0.001	<0.001	<0.001	
MW-1	10/26/2005	92.88	96.9	69.7	584	<0.001	<0.001	<0.001	<0.001	Clear
MW-1	1/24/2006	93.38	107	65	560	<0.001	<0.001	<0.001	<0.001	
MW-1	4/25/2006	93.55	181	66.8	780	<0.001	<0.001	<0.001	<0.001	
MW-1	10/9/2006	94.61	219	80.9	836	<0.001	<0.001	<0.001	<0.001	Clear
MW-1	11/13/2006	94.83	234	XXX	752	XXX	XXX	XXX	XXX	Clear with no odor
MW-1	12/4/2006	95.08	229	XXX	698	XXX	XXX	XXX	XXX	Clear / No Odor
MW-1	2/5/2007	95.12	301	83.1	772	<0.001	<0.001	<0.001	<0.001	Clear/
MW-1	3/22/2007		278		976					
MW-1	4/4/2007	95.10	290	XXX	1210	XXX	XXX	XXX	XXX	clear with no odor
MW-1	6/14/2007	95.12	285	XXX	1350	XXX	XXX	XXX	XXX	clear
MW-1	6/29/2007	95.12	112	74.4	588	<0.001	<0.001	<0.001	<0.001	Clear No Odor
MW-1	7/19/2007	95.40	328	XXX	912	XXX	XXX	XXX	XXX	Clear Slight Odor
MW-1	8/22/2007	95.46	376	91.1	1556	0.006	<0.002	<0.002	<0.006	Clear No Odor
MW-1	9/26/2007	95.61	380	XXX	1232	XXX	XXX	XXX	XXX	Clear with Slight Odor
MW-1	11/28/2007	95.88	200	76.6	791	<0.001	<0.001	<0.001	<0.003	Clear Slight odor

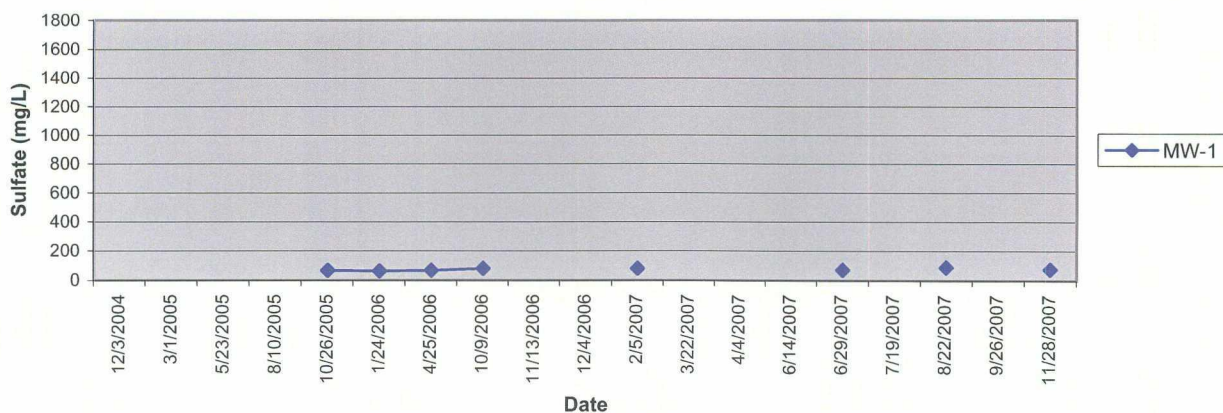
G-1 Site (Abo Apache LA)
Chloride Over Time



G-1 Site (Abo Apache LA)
TDS Over Time



G-1 Site (Abo Apache LA)
Sulfate Over Time



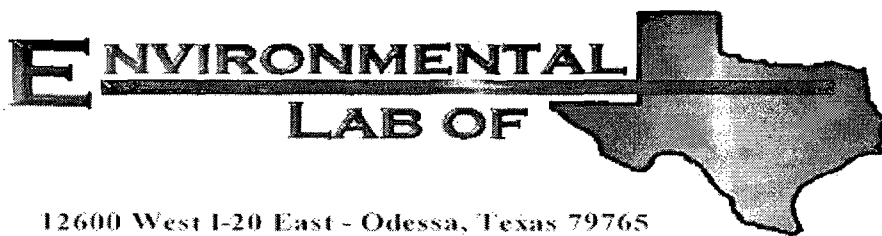
R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW, Suite F-142
Albuquerque, NM 87104
505-266-5004

Ground Water Chemistry

G-1 Site

Rice Operating Company
2007 Annual Report

1/24/2008



12600 West I-20 East - Odessa, Texas 79765

A Xenco Laboratories Company

Analytical Report

Prepared for:

Kristin Farris-Pope

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: ABO Apache Leak

Project Number: None Given

Location: T19S R37E Sec1 G ~ Lea County New Mexico

Lab Order Number: 7D05010

Report Date: 04/11/07

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well # 1	7D05010-01	Water	04/04/07 19:20	04-05-2007 13:20

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well # 1 (7D05010-01) Water									
Chloride	290	5.00	mg/L	10	ED71003	04/10/07	04/10/07	EPA 300.0	
Total Dissolved Solids	1210	10.0	"	1	ED71008	04/05/07	04/06/07	EPA 160.1	

Environmental Lab of Texas

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Page 2 of 4

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch ED71003 - General Preparation (WetChem)										
Blank (ED71003-BLK1)				Prepared & Analyzed: 04/10/07						
Chloride	ND	0.500	mg/L							
LCS (ED71003-BS1)				Prepared & Analyzed: 04/10/07						
Chloride	12.0	0.500	mg/L	10.0		120	80-120			
Calibration Check (ED71003-CCV1)				Prepared & Analyzed: 04/10/07						
Chloride	9.00		mg/L	10.0		90.0	80-120			
Duplicate (ED71003-DUP1)				Source: 7D05009-01		Prepared & Analyzed: 04/10/07				
Chloride	1590	25.0	mg/L		1940			19.8	20	
Duplicate (ED71003-DUP2)				Source: 7D05014-05		Prepared & Analyzed: 04/10/07				
Chloride	1590	50.0	mg/L		1410			1.43	20	
Matrix Spike (ED71003-MS1)				Source: 7D05009-01		Prepared & Analyzed: 04/10/07				
Chloride	2080	25.0	mg/L	500	1940	28.0	80-120			
Matrix Spike (ED71003-MS2)				Source: 7D05014-05		Prepared & Analyzed: 04/10/07				
Chloride	2480	50.0	mg/L	1000	1410	107	80-120			
Batch ED71008 - General Preparation (WetChem)										
Blank (ED71008-BLK1)				Prepared: 04/05/07 Analyzed: 04/06/07						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (ED71008-DUP1)				Source: 7D05009-01		Prepared: 04/05/07 Analyzed: 04/06/07				
Total Dissolved Solids	3700	10.0	mg/L		3070			18.6	20	

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:



Date:

4/11/2007

Brent Barron, Laboratory Director/Corp. Technical Director
Celey D. Keene, Org. Tech Director
Raland K. Tuttle, Laboratory Consultant

James Mathis, QA/QC Officer
Jeanne Mc Murrey, Inorg. Tech Director

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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Pire
 Date/ Time: 4-5-07 1:20
 Lab ID #: 7005010
 Initials: AL

Sample Receipt Checklist

Client Initials

1 Temperature of container/ cooler?	<u>Yes</u>	No	<u>-20</u> °C	
2 Shipping container in good condition?	<u>Yes</u>	No		
3 Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	Not Present	
4 Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present	
5 Chain of Custody present?	<u>Yes</u>	No		
6 Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
7 Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
8 Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
9 Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
10 Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
11 Containers supplied by ELOT?	<u>Yes</u>	No		
12 Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
13 Samples properly preserved?	<u>Yes</u>	No	See Below	
14 Sample bottles intact?	<u>Yes</u>	No		
15 Preservations documented on Chain of Custody?	<u>Yes</u>	No		
16 Containers documented on Chain of Custody?	<u>Yes</u>	No		
17 Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
18 All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
19 Subcontract of sample(s)?	<u>Yes</u>	No	Not Applicable	
20 VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

Variance Documentation

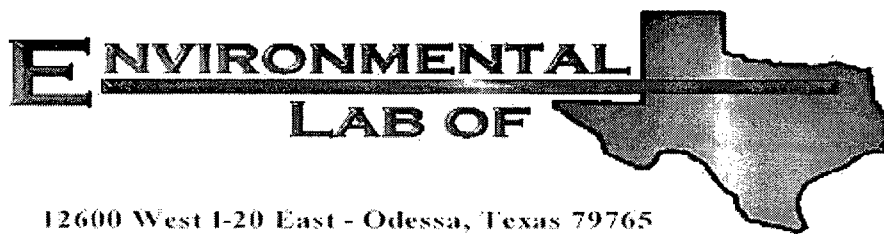
Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
☐ Client understands and would like to proceed with analysis
☐ Cooling process had begun shortly after sampling event



12600 West I-20 East - Odessa, Texas 79765

A Xenco Laboratories Company

Analytical Report

Prepared for:

Kristin Farris-Pope

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: ABO Apache Leak

Project Number: None Given

Location: T19S R36E Sec1 G ~ Lea County New Mexico

Lab Order Number: 7F06016

Report Date: 06/26/07

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well # 1	7F06016-01	Water	05/31/07 07:30	06-06-2007 12:51

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well # 1 (7F06016-01) Water									
Benzene	0.00237	0.00100	mg/L	1	EF70802	06/08/07	06/09/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		<i>113 %</i>	<i>80-120</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>98.6 %</i>	<i>80-120</i>		"	"	"	"	

Environmental Lab of Texas

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Page 2 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well # 1 (7F06016-01) Water									
Total Alkalinity	224	2.00	mg/L	1	EF71309	06/13/07	06/13/07	EPA 310.1M	
Chloride	334	5.00	"	10	EF71204	06/12/07	06/12/07	EPA 300.0	
Total Dissolved Solids	1210	10.0	"	1	EF71110	06/06/07	06/11/07	EPA 160.1	
Sulfate	83.8	5.00	"	10	EF71204	06/12/07	06/12/07	EPA 300.0	

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Total Metals by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well # 1 (7F06016-01) Water									
Calcium	179	4.05	mg/L	50	EF70807	06/08/07	06/08/07	EPA 6010B	
Magnesium	24.6	0.360	"	10	"	"	"	"	
Potassium	2.97	0.600	"	"	"	"	"	"	
Sodium	60.8	2.15	"	50	"	"	"	"	

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EF70802 - EPA 5030C (GC)

Blank (EF70802-BLK1)

Prepared & Analyzed: 06/08/07

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	54.1		ug/l	50.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	45.4		"	50.0		90.8	80-120			

LCS (EF70802-BS1)

Prepared & Analyzed: 06/08/07

Benzene	0.0548	0.00100	mg/L	0.0500		110	80-120			
Toluene	0.0556	0.00100	"	0.0500		111	80-120			
Ethylbenzene	0.0543	0.00100	"	0.0500		109	80-120			
Xylene (p/m)	0.101	0.00100	"	0.100		101	80-120			
Xylene (o)	0.0569	0.00100	"	0.0500		114	80-120			
Surrogate: a,a,a-Trifluorotoluene	54.6		ug/l	50.0		109	80-120			
Surrogate: 4-Bromofluorobenzene	51.7		"	50.0		103	80-120			

Calibration Check (EF70802-CCV1)

Prepared: 06/08/07 Analyzed: 06/09/07

Benzene	0.0576		mg/L	0.0500		115	80-120			
Toluene	0.0567		"	0.0500		113	80-120			
Ethylbenzene	0.0537		"	0.0500		107	80-120			
Xylene (p/m)	0.0999		"	0.100		99.9	80-120			
Xylene (o)	0.0573		"	0.0500		115	80-120			
Surrogate: a,a,a-Trifluorotoluene	57.9		ug/l	50.0		116	80-120			
Surrogate: 4-Bromofluorobenzene	53.0		"	50.0		106	80-120			

Matrix Spike (EF70802-MS1)

Source: 7F06019-03

Prepared: 06/08/07 Analyzed: 06/09/07

Benzene	0.0598	0.00100	mg/L	0.0500	ND	120	80-120			
Toluene	0.0593	0.00100	"	0.0500	ND	119	80-120			
Ethylbenzene	0.0584	0.00100	"	0.0500	ND	117	80-120			
Xylene (p/m)	0.107	0.00100	"	0.100	ND	107	80-120			
Xylene (o)	0.0614	0.00100	"	0.0500	ND	123	80-120			M1
Surrogate: a,a,a-Trifluorotoluene	58.4		ug/l	50.0		117	80-120			
Surrogate: 4-Bromofluorobenzene	56.2		"	50.0		112	80-120			

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EF70802 - EPA 5030C (GC)

Matrix Spike Dup (EF70802-MSD1)

Source: 7F06019-03

Prepared: 06/08/07 Analyzed: 06/09/07

Benzene	0.0565	0.00100	mg/L	0.0500	ND	113	80-120	6.01	20	
Toluene	0.0566	0.00100	"	0.0500	ND	113	80-120	5.17	20	
Ethylbenzene	0.0556	0.00100	"	0.0500	ND	111	80-120	5.26	20	
Xylene (p/m)	0.102	0.00100	"	0.100	ND	102	80-120	4.78	20	
Xylene (o)	0.0584	0.00100	"	0.0500	ND	117	80-120	5.00	20	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	58.3		ug/l	50.0		117	80-120			
Surrogate: <i>4</i> -Bromofluorobenzene	54.2		"	50.0		108	80-120			

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Page 6 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EF71110 - General Preparation (WetChem)

Blank (EF71110-BLK1)

Prepared: 06/07/07 Analyzed: 06/11/07

Total Dissolved Solids ND 10.0 mg/L

Duplicate (EF71110-DUP1)

Source: 7F06016-01

Prepared: 06/07/07 Analyzed: 06/11/07

Total Dissolved Solids 1270 10.0 mg/L 1210 4.84 20

Duplicate (EF71110-DUP2)

Source: 7F06019-03

Prepared: 06/07/07 Analyzed: 06/11/07

Total Dissolved Solids 7020 10.0 mg/L 6900 1.72 20

Batch EF71204 - General Preparation (WetChem)

Blank (EF71204-BLK1)

Prepared & Analyzed: 06/12/07

Sulfate ND 0.500 mg/L

Chloride ND 0.500 "

LCS (EF71204-BS1)

Prepared & Analyzed: 06/12/07

Sulfate 10.0 0.500 mg/L 10.0 100 80-120

Chloride 10.8 0.500 " 10.0 108 80-120

Calibration Check (EF71204-CCV1)

Prepared & Analyzed: 06/12/07

Sulfate 10.0 mg/L 10.0 100 80-120

Chloride 10.8 " 10.0 108 80-120

Duplicate (EF71204-DUP1)

Source: 7F06020-03

Prepared & Analyzed: 06/12/07

Sulfate 4550 250 mg/L 4670 2.60 20

Chloride 17500 250 " 18100 3.37 20

Matrix Spike (EF71204-MS1)

Source: 7F06020-03

Prepared & Analyzed: 06/12/07

Chloride 21100 250 mg/L 5000 18100 60.0 80-120 QM-10

Sulfate 7770 250 " 5000 4670 62.0 80-120 QM-10

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122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EF71309 - General Preparation (WetChem)

Blank (EF71309-BLK1)

Prepared & Analyzed: 06/13/07

Total Alkalinity	ND	2.00	mg/L							
Carbonate Alkalinity	ND	0.100	"							
Bicarbonate Alkalinity	ND	2.00	"							
Hydroxide Alkalinity	ND	0.100	"							

LCS (EF71309-BSI)

Prepared & Analyzed: 06/13/07

Bicarbonate Alkalinity	174	2.00	mg/L	200		87.0	85-115			
------------------------	-----	------	------	-----	--	------	--------	--	--	--

Duplicate (EF71309-DUP1)

Source: 7F06017-02

Prepared & Analyzed: 06/13/07

Total Alkalinity	348	2.00	mg/L		348			0.00	20	
------------------	-----	------	------	--	-----	--	--	------	----	--

Reference (EF71309-SRM1)

Prepared & Analyzed: 06/13/07

Total Alkalinity	250		mg/L	250		100	90-110			
------------------	-----	--	------	-----	--	-----	--------	--	--	--

Environmental Lab of Texas

A Xenco Laboratories Company

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Page 8 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Total Metals by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EF70807 - 6010B/No Digestion

Blank (EF70807-BLK1)

Prepared & Analyzed: 06/08/07

Calcium	ND	0.0810	mg/L							
Magnesium	ND	0.0360	"							
Potassium	ND	0.0600	"							
Sodium	ND	0.0430	"							

Calibration Check (EF70807-CCV1)

Prepared & Analyzed: 06/08/07

Calcium	1.78		mg/L	2.00		89.0	85-115			
Magnesium	1.83		"	2.00		91.5	85-115			
Potassium	2.28		"	2.00		114	85-115			
Sodium	1.82		"	2.00		91.0	85-115			

Duplicate (EF70807-DUP1)

Source: 7F05011-03

Prepared & Analyzed: 06/08/07

Calcium	139	4.05	mg/L		139			0.00	20	
Magnesium	29.5	0.360	"		29.8			1.01	20	
Potassium	6.37	0.600	"		6.57			3.09	20	
Sodium	121	2.15	"		124			2.45	20	

Environmental Lab of Texas

A Xenco Laboratories Company

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Page 9 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Notes and Definitions

QM-10 LCS/LCSD were analyzed in place of MS/MSD.
M1 The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:



Date:

6/26/2007

Brent Barron, Laboratory Director/Corp. Technical Director
Celey D. Keene, Org. Tech Director
Raland K. Tuttle, Laboratory Consultant

James Mathis, QA/QC Officer
Jeanne Mc Murrey, Inorg. Tech Director

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Environmental Lab of Texas

A Xenco Laboratories Company

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Page 10 of 10

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Name: ABO Apache Leak

Project #:

Project Loc: T19S R36E Sec1 G ~ Lea County New Mexico

PO#:

Fax No: (505) 397-1471

NPDES

rozanne@valornet.com

e-mail:

7F00016

56825

LAB # (lab use only)	183835	FIELD CODE	Monitor Well #1	01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Special Instructions:

Please email to :

jpurvis@riceswd.com

Date	Time
------	------

Received by:

Mary Morton

Received by:

10

Received by ELOT: Andrew Lamm

	Laboratory Comments:
--	----------------------

Sample Containers Intact?

VOCs Free of HeadSpace?

Custody seals on container(s)

Custody seals on cooler(\$)
Sample Hand Delivered

by Sample Client Rep.?

by Courier? UPS

Temperature Upon Receipt:

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The number of transformed cells was determined by the number of colonies obtained on the selective medium. The results are the mean of three independent experiments. Error bars represent the standard deviation.

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Rice
Date/ Time: 6-6-07 12:51
Lab ID #: 7F06016
Initials: AL

Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	<u>Yes</u>	No	<u>20</u> °C
#2	Shipping container in good condition?	<u>Yes</u>	No	
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present
#5	Chain of Custody present?	<u>Yes</u>	No	
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No	
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No	
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No	
#11	Containers supplied by ELOT?	<u>Yes</u>	No	
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below
#13	Samples properly preserved?	<u>Yes</u>	No	See Below
#14	Sample bottles intact?	<u>Yes</u>	No	
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No	
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No	
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below
#19	Subcontract of sample(s)?	<u>Yes</u>	No	Not Applicable
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____
Regarding: _____

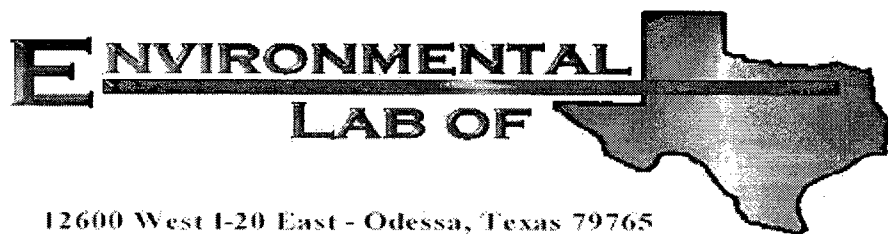
Corrective Action Taken:

Check all that Apply:

☐ See attached e-mail/ fax

☐ Client understands and would like to proceed with analysis

☐ Cooling process had begun shortly after sampling event



12600 West I-20 East - Odessa, Texas 79765

A Xenco Laboratories Company

Analytical Report

Prepared for:

Kristin Farris-Pope

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: ABO Apache Leak

Project Number: None Given

Location: T19S R37E Sec1 G ~ Lea County New Mexico

Lab Order Number: 7F14021

Report Date: 06/20/07

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well # 1	7F14021-01	Water	06/14/07 07:10	06-14-2007 13:45

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well # 1 (7F14021-01) Water									
Chloride	285	5.00	mg/L	10	EF71803	06/18/07	06/20/07	EPA 300.0	
Total Dissolved Solids	1350	10.0	"	1	EF72004	06/18/07	06/20/07	EPA 160.1	

Environmental Lab of Texas

A Xenco Laboratories Company

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Page 2 of 4

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF71803 - General Preparation (WetChem)										
Blank (EF71803-BLK1)				Prepared: 06/18/07 Analyzed: 06/20/07						
Chloride	ND	0.500	mg/L							
LCS (EF71803-BS1)				Prepared: 06/18/07 Analyzed: 06/20/07						
Chloride	9.87	0.500	mg/L	10.0		98.7	80-120			
Calibration Check (EF71803-CCV1)				Prepared: 06/18/07 Analyzed: 06/20/07						
Chloride	8.94		mg/L	10.0		89.4	80-120			
Duplicate (EF71803-DUP1)				Source: 7F14003-06		Prepared: 06/18/07 Analyzed: 06/20/07				
Chloride	8400	100	mg/L		6670			23.0	20	R2
Matrix Spike (EF71803-MS1)				Source: 7F14003-06		Prepared: 06/18/07 Analyzed: 06/20/07				
Chloride	9860	100	mg/L	2000	6670	160	80-120			QM-10
Batch EF72004 - General Preparation (WetChem)										
Blank (EF72004-BLK1)				Prepared: 06/18/07 Analyzed: 06/20/07						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (EF72004-DUP1)				Source: 7F14003-01		Prepared: 06/18/07 Analyzed: 06/20/07				
Total Dissolved Solids	3220	10.0	mg/L		3180			1.25	20	
Duplicate (EF72004-DUP2)				Source: 7F14020-03		Prepared: 06/18/07 Analyzed: 06/20/07				
Total Dissolved Solids	526	10.0	mg/L		534			1.51	20	

Environmental Lab of Texas

A Xenco Laboratories Company

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Page 3 of 4


Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: ABO Apache Leak
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Notes and Definitions

R2 The RPD exceeded the acceptance limit.
QM-10 LCS/LCSD were analyzed in place of MS/MSD.
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By: 

Date: 6/20/2007

Brent Barron, Laboratory Director/Corp. Technical Director
Celey D. Keene, Org. Tech Director
Raland K. Tuttle, Laboratory Consultant

James Mathis, QA/QC Officer
Jeanne Mc Murrey, Inorg. Tech Director

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If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

A Xenco Laboratories Company

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Page 4 of 4

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Kristin Farris Pope kpope@riceswd.com

Project Name: ABO Apache Leak

Company Name RICE Operating Company

Project #:

Company Address: 122 W. Taylor Street

Project Loc: T19\$ R37E Sec1 G ~ Lea County New Mexico

City/State/Zip: Hobbs, New Mexico 88240

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Telephone No: (505) 393-9174

Fax No. (505) 397-1471

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Rozanne Johnson (505)631-9310

rozanne@valornet.com

LAB # (lab use only)		FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Matrix	Preservation & # of Containers	Analyze For:									
ORDER #: 7F14021											TPC TOTAL TPC TX 1006 Cations (Ca, Mg, Na, K) Anions (Cl, SO4, Alkalinity) SAR / ESP / CEC Metals: As Ag Ba Cd Cr Pb Hg Se Volatiles (BTEX-N #260) Semivolatiles BTEX #021B/5030 or BTEX #260 RCI N.O.R.M. Total Dissolved Solids Chlorides Standard TAT									
284307		Monitor Well #1			6/14/2007	7:10		1	GW	Ice HNO3 HCl H2SO4 NaOH Na2S2O3 None (1) 1 Liter HDPE Other (Specify) DW-Drinking Water SL-Sludge GV- Groundwater SL-Solids NP-Non-Flammable Specific Other	TPC: 418.1 8015M 8015B TPC: TX 1006 Cations (Ca, Mg, Na, K) Anions (Cl, SO4, Alkalinity) SAR / ESP / CEC Metals: As Ag Ba Cd Cr Pb Hg Se Volatiles (BTEX-N #260) Semivolatiles BTEX #021B/5030 or BTEX #260 RCI N.O.R.M. Total Dissolved Solids Chlorides Standard TAT									

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Rice
 Date/ Time: 6/14/07 1:45
 Lab ID #: 7F14021
 Initials: CR

Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	Yes	No	1.5 °C
#2	Shipping container in good condition?	<u>Yes</u>	No	
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present
#5	Chain of Custody present?	<u>Yes</u>	No	
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No	
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No	
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No	
#11	Containers supplied by EL0T?	<u>Yes</u>	No	
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below
#13	Samples properly preserved?	<u>Yes</u>	No	See Below
#14	Sample bottles intact?	<u>Yes</u>	No	
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No	
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No	
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below
#19	Subcontract of sample(s)?	Yes	No	<u>Not Applicable</u>
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
☐ Client understands and would like to proceed with analysis
☐ Cooling process had begun shortly after sampling event

Analytical Report 285440

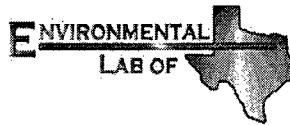
for

Rice Operating Co.

Project Manager: Kristin Pope

ABP Apache Leak

12-JUL-07



12600 West I-20 East Odessa, Texas 79765

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NELAC certification numbers:

Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675

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12-JUL-07

Project Manager: **Kristin Pope**

Rice Operating Co.

122 West Taylor

Hobbs, NM 88240

Reference: XENCO Report No: **285440**

ABP Apache Leak

Project Address: T 19 S R37E Sec 1G ~ Lea County, NM

Kristin Pope:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 285440. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 285440 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron

Odessa Laboratory Director

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Sample Cross Reference 285440

Rice Operating Co., Hobbs, NM

ABP Apache Leak

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Monitor Well # 1	W	Jun-29-07 07:05		285440-001



Certificate of Analysis Summary 285440

Rice Operating Co., Hobbs, NM

Project Name: ABP Apache Leak

Project Id:

Date Received in Lab: Jul-03-07 05:05 pm

Contact: Kristin Pope

Report Date: 12-JUL-07


Project Location: T 19 S R37E Sec 1G ~ Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id: 285440-001			
	Field Id: Monitor Well # 1			
	Depth:			
	Matrix: WATER			
	Sampled: Jun-29-07 07:05			
BTEX by EPA 8021B	Extracted: Jul-10-07 11:54			
	Analyzed: Jul-10-07 17:12			
	Units/RL: mg/L RL			
Benzene	ND 0.0010			
Toluene	ND 0.0010			
Ethylbenzene	ND 0.0010			
m,p-Xylene	ND 0.0020			
o-Xylene	ND 0.0010			
Total Xylenes	ND			
Total BTEX	ND			
Bicarbonate, Alkalinity by EPA 310.1	Extracted:			
	Analyzed: Jul-06-07 15:00			
	Units/RL: mg/L RL			
Alkalinity, Bicarbonate	240 4.00			
Inorganic Anions by EPA 300	Extracted:			
	Analyzed: Jul-09-07 18:09			
	Units/RL: mg/L RL			
Chloride	112 5.00			
Sulfate	74.4 5.00			
Metals per ICP by SW846 6010B	Extracted:			
	Analyzed: Jul-11-07 14:37			
	Units/RL: mg/L RL			
Calcium	114 0.100			
Magnesium	13.1 0.010			
Potassium	2.65 0.500			
Sodium	47.2 0.500			
Residue, Filterable (TDS) by EPA 160.1	Extracted:			
	Analyzed: Jul-06-07 15:15			
	Units/RL: mg/L RL			
Total dissolve solids	588 5.00			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron
Odessa Laboratory Director



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.

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(210) 509-3334	(201) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555



Form 2 - Surrogate Recoveries

Project Name: ABP Apache Leak

Work Order #: 285440

Project ID:

Lab Batch #: 700105

Sample: 285371-018 S / MS

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0483	0.0500	97	80-120	

Lab Batch #: 700105

Sample: 285371-018 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0504	0.0500	101	80-120	

Lab Batch #: 700105

Sample: 285440-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0413	0.0500	83	80-120	

Lab Batch #: 700105

Sample: 496996-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0531	0.0500	106	80-120	

Lab Batch #: 700105

Sample: 496996-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0484	0.0500	97	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Blank Spike Recovery

Project Name: ABP Apache Leak

Work Order #: 285440

Project ID:

Lab Batch #: 700105

Sample: 496996-1-BKS

Matrix: Water

Date Analyzed: 07/10/2007

Date Prepared: 07/10/2007

Analyst: CELKEE

Reporting Units: mg/L

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.0500	0.0482	96	70-125	
Toluene	ND	0.0500	0.0508	102	70-125	
Ethylbenzene	ND	0.0500	0.0562	112	71-129	
m,p-Xylene	ND	0.1000	0.1006	101	70-131	
o-Xylene	ND	0.0500	0.0549	110	71-133	

Lab Batch #: 700048

Sample: 700048-1-BKS

Matrix: Water

Date Analyzed: 07/06/2007

Date Prepared: 07/06/2007

Analyst: WRU

Reporting Units: mg/L

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Bicarbonate, Alkalinity by EPA 310.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Alkalinity, Bicarbonate	ND	200	174	87	80-120	

Lab Batch #: 699973

Sample: 699973-1-BKS

Matrix: Water

Date Analyzed: 07/09/2007

Date Prepared: 07/09/2007

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	9.80	98	90-110	
Sulfate	ND	10.0	9.58	96	90-110	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.



Form 3 - MS Recoveries

Project Name: ABP Apache Leak

Work Order #: 285440

Lab Batch #: 699973

Date Analyzed: 07/09/2007

QC- Sample ID: 285440-001 S

Reporting Units: mg/L

Project ID:

Analyst: LATCOR

Date Prepared: 07/09/2007

Batch #: 1

Matrix: Water

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	112	100	206	94	90-110	
Sulfate	74.4	100	169	95	90-110	

Matrix Spike Percent Recovery [D] = $100 \cdot (C-A)/B$

Relative Percent Difference [E] = $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: ABP Apache Leak

Work Order #: 285440

Lab Batch ID: 700105

Date Analyzed: 07/11/2007

Reporting Units: mg/L

Project ID:

QC- Sample ID: 285371-018 S Batch #: 1 Matrix: Water

Date Prepared: 07/10/2007 Analyst: CELKEE

Reporting Units: mg/L		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B Analytes		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene		ND	0.0500	0.0509	102	0.0500	0.0494	99	3	70-125	25	
Toluene		ND	0.0500	0.0516	103	0.0500	0.0500	100	3	70-125	25	
Ethylbenzene		ND	0.0500	0.0553	111	0.0500	0.0537	107	4	71-129	25	
m,p-Xylene		ND	0.1000	0.0972	97	0.1000	0.0946	95	2	70-131	25	
o-Xylene		ND	0.0500	0.0536	107	0.0500	0.0524	105	2	71-133	25	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times (D-G)/(D+G)$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery

Project Name: ABP Apache Leak

Work Order #: 285440

Lab Batch #: 700048

Date Analyzed: 07/06/2007

QC- Sample ID: 285425-001 D

Reporting Units: mg/L

Project ID:

Date Prepared: 07/06/2007

Analyst: WRU

Batch #: 1

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Bicarbonate, Alkalinity by EPA 310.1	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Alkalinity, Bicarbonate	210	210	0	20	
Alkalinity, Carbonate	ND	ND	NC	20	

Lab Batch #: 699973

Date Analyzed: 07/09/2007

QC- Sample ID: 285440-001 D

Reporting Units: mg/L

Date Prepared: 07/09/2007

Analyst: LATCOR

Batch #: 1

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Inorganic Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	112	111	1	20	
Sulfate	74.4	74.1	0	20	

Lab Batch #: 700076

Date Analyzed: 07/11/2007

QC- Sample ID: 284692-001 D

Reporting Units: mg/L

Date Prepared: 07/11/2007

Analyst: LATCOR

Batch #: 1

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Metals per ICP by SW846 6010B	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Calcium	659	653	1	25	
Magnesium	85.0	88.8	4	25	
Potassium	21.2	20.4	4	25	
Sodium	4180	4190	0	25	

Lab Batch #: 699879

Date Analyzed: 07/06/2007

QC- Sample ID: 285440-001 D

Reporting Units: mg/L

Date Prepared: 07/06/2007

Analyst: IRO

Batch #: 1

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Residue, Filterable (TDS) by EPA 160.1	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolve solids	588	602	2	30	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

Analytical Report 286347

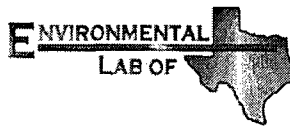
for

Rice Operating Co.

Project Manager: Kristin Pope

ABO Apache Leak

27-JUL-07



12600 West I-20 East Odessa, Texas 79765

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NELAC certification numbers:

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27-JUL-07

Project Manager: **Kristin Pope**
Rice Operating Co.
122 West Taylor
Hobbs, NM 88240

Reference: XENCO Report No: **286347**
ABO Apache Leak
Project Address: T19S R37E Sec 1 G ~ Lea County New Mexico

Kristin Pope:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 286347. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

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We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron

Odessa Laboratory Director

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Sample Cross Reference 286347



Rice Operating Co., Hobbs, NM

ABO Apache Leak

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Monitor Well # 1	W	Jul-19-07 09:35		286347-001



Certificate of Analysis Summary 286347

Rice Operating Co., Hobbs, NM

Project Name: ABO Apache Leak



Project Id:

Contact: Kristin Pope

Project Location: T19S R37E Sec 1 G ~ Lea County New M

Date Received in Lab: Fri Jul-20-07 01:45 pm

Report Date: 27-JUL-07

Project Manager: Brent Barron, II

Analysis Requested		Lab Id:	286347-001				
		Field Id:	Monitor Well # 1				
		Depth:					
		Matrix:	WATER				
		Sampled:	Jul-19-07 09:35				
Inorganic Anions by EPA 300		Extracted:					
		Analyzed:	Jul-22-07 01:11				
		Units/RL:	mg/L RL				
Chloride			328 5.00				
Residue, Filterable (TDS) by EPA 160.1		Extracted:					
		Analyzed:	Jul-25-07 16:30				
		Units/RL:	mg/L RL				
Total dissolved solids			912 5.00				

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Brent Barron
Odessa Laboratory Director



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
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- K** Sample analyzed outside of recommended hold time.

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Blank Spike Recovery



Project Name: ABO Apache Leak

Work Order #: 286347

Project ID:

Lab Batch #: 700978

Sample: 700978-1-BKS

Matrix: Water

Date Analyzed: 07/21/2007

Date Prepared: 07/21/2007

Analyst: IRO

Reporting Units: mg/L

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	10.3	103	90-110	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.



Form 3 - MS Recoveries

Project Name: ABO Apache Leak



Work Order #: 286347

Lab Batch #: 700978

Date Analyzed: 07/21/2007

QC- Sample ID: 286343-001 S

Reporting Units: mg/L

Project ID:

Analyst: IRO

Date Prepared: 07/21/2007

Batch #: 1

Matrix: Water

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	661	250	907	98	90-110	

Matrix Spike Percent Recovery [D] = $100 \times (C-A)/B$

Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes



Sample Duplicate Recovery



Project Name: ABO Apache Leak

Work Order #: 286347

Lab Batch #: 700978

Date Analyzed: 07/21/2007

QC- Sample ID: 286343-001 D

Reporting Units: mg/L

Project ID:

Analyst: IRO

Date Prepared: 07/21/2007

Batch #: 1

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Inorganic Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	661	663	0	20	

Lab Batch #: 701044

Date Analyzed: 07/25/2007

QC- Sample ID: 286396-001 D

Reporting Units: mg/L

Date Prepared: 07/25/2007

Batch #: 1

Analyst: IRO

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Residue, Filterable (TDS) by EPA 160.1	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolved solids	2090	2160	3	30	

Lab Batch #: 701044

Date Analyzed: 07/25/2007

QC- Sample ID: 286396-001 D

Reporting Units: mg/L

Date Prepared: 07/25/2007

Batch #: 1

Analyst: IRO

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Residue, Filterable (TDS) by EPA 160.1	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolved solids	2560	2580	1	30	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Rice
Date/ Time: 7-20-07 1:45
Lab ID #: 286347
Initials: AL

Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	<u>Yes</u>	No	-20 °C <u>Not Frozen</u>
#2	Shipping container in good condition?	<u>Yes</u>	No	
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present
#5	Chain of Custody present?	<u>Yes</u>	No	
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No	
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No	
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No	
#11	Containers supplied by ELOT?	<u>Yes</u>	No	
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below
#13	Samples properly preserved?	<u>Yes</u>	No	See Below
#14	Sample bottles intact?	<u>Yes</u>	No	
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No	
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No	
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below
#19	Subcontract of sample(s)?	<u>Yes</u>	No	Not Applicable
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

- Check all that Apply:
- ☐ See attached e-mail/ fax
 - ☐ Client understands and would like to proceed with analysis
 - ☐ Cooling process had begun shortly after sampling event



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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: KRISTIN FARRIS-POPE
122 W. TAYLOR STREET
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 11/30/07
Reporting Date: 12/07/07
Project Number: NOT GIVEN
Project Name: ABO APACHE LEAK
Project Location: T19S-RE-SEC1 G~LEA COUNTY, NM

Sampling Date: 11/28/07
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM/KS

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity (mgCaCO ₃ /L)
ANALYSIS DATE:		12/04/07	12/04/07	12/04/07	12/04/07	12/04/07	12/04/07
H13806-1	MONITOR WELL #1	87	125	21.8	4.41	1,207	236
Quality Control		NR	49.2	50.8	2.88	1,423	NR
True Value QC		NR	50.0	50.0	3.00	1,413	NR
% Recovery		NR	98.5	102	96.0	101	NR
Relative Percent Difference		NR	< 0.1	1.6	12.4	1.1	NR

METHODS:	SM3500-Ca-D	3500-Mg E	8049	120.1	310.1
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	Cl ⁻ (mg/L)	SO ₄ (mg/L)	CO ₃ (mg/L)	HCO ₃ (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	12/06/07	12/04/07	12/04/07	12/04/07	12/04/07	12/03/07
H13806-1 MONITOR WELL #1	200	76.6	0	288	7.36	791
Quality Control	500	28.0	NR	988	7.05	NR
True Value QC	500	25.0	NR	1000	7.00	NR
% Recovery	100	112	NR	98.8	101	NR
Relative Percent Difference	< 0.1	5.8	NR	1.2	0.1	NR

METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1
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Chemist

12/07/07
Date



ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: KRISTIN FARRIS-POPE
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 11/30/07
Reporting Date: 12/03/07
Project Number: NOT GIVEN
Project Name: ABO APACHE LEAK
Project Location: T19S-RE-SEC1 G ~ LEA COUNTY, NM

Sampling Date: 11/28/07
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: AB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		11/30/07	11/30/07	11/30/07	11/30/07
H13806-1	MONITOR WELL #1	<0.001	<0.001	<0.001	<0.003
Quality Control		0.107	0.096	0.095	0.300
True Value QC		0.100	0.100	0.100	0.300
% Recovery		107	96	95	100
Relative Percent Difference		1.7	3.4	3.3	4.1

METHOD: EPA SW-846 8021B

Bryant J. Coohy
Chemist

12/03/07
Date

Cardinal Laboratories, Inc.

101 East Marland - Hobbs, New
Mexico 88240
Tel (505) 393-2326
Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #



ANALYSIS REQUEST

(Circle or Specify Method No.)

None Results		Yes	No	Additional Fax Number:	
Results	Yes	No	No	No	No
BTEX 8021B/602	X				
TPH 418,1/TX1005 / TX1005 Extended (C35)					
PAH 8270C					
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7					
TCLP Metals Ag As Ba Cd Cr Pb Se Hg					
TCLP Volatiles					
TCLP Semi Volatiles					
TCLP Pesticides					
RCI					
GC/MS Vol. 8260B/624					
GC/MS Seml. Vol. 8270C/625					
PCBs 8082/608					
Pesticides 8081A/608					
BOD, TSS, pH					
Moisture Content					
Cations (Ca, Mg, Na, K)	X				
Anions (Cl, SO4, CO3, HCO3)	X				
Total Dissolved Solids	X				
Chlorides					
Turn Around Time ~ 24 Hours					

Company Name: RICE Operating Company		BILL TO Company: RICE Operating Company		PO#
Project Manager: Kristin Farris-Pope, Project Scientist		Address: 122 W Taylor Street ~ Hobbs, New Mexico 88240		(Street, City, Zip)
Address: 122 W Taylor Street ~ Hobbs, New Mexico 88240		Phone#: (505) 393-9174		Fax#: (505) 397-1471
Phone #: (505) 393-9174		Fax #: (505) 397-1471		
Project Name: Abo Apache Leak				
Project Location: T19S-RE-Sec1 G ~ Lea County - New Mexico				

[illegible]

Relinquished by:  Rozanne Jamison	Date: 11-30-07	Time: 10:00
Relinquished by:	Date:	Time:
Received by: 	Date: 11-30-07	Time: 10:00 AM
Received By: (Laboratory Staff)	Date:	Time:

Delivered By: (Circle One)	Sample Condition	Checked By:						
Sampler - UPS - Bus - Other:	<table border="1"> <tr> <td>Cool</td> <td>Intact</td> </tr> <tr> <td>Yes <input checked="" type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/></td> </tr> <tr> <td>No <input type="checkbox"/></td> <td>No <input type="checkbox"/></td> </tr> </table>	Cool	Intact	Yes <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No <input type="checkbox"/>	(Initials)
	Cool	Intact						
	Yes <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>						
No <input type="checkbox"/>	No <input type="checkbox"/>							
		fil						

Email Results to: kpope@riceswd.com
lweinheimer@riceswd.com
rozanne@valornet.com