# 1R-427-62

# Annual GW Mon. REPORTS

DATE: 2007



### Highlander Environmental Corp.

Midland, Texas

CERTIFIED MAIL
RETURN RECEIPT NO. 7002 3150 0005 0508 7713

March 7, 2008
Mr. Wayne Price
New Mexico Energy, Minerals, & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Re: 2007 Annual Groundwater Summary Report & Project Status Report, Rice Operating Company, Eunice Monument Eumont (EME) Saltwater Disposal System (SWD) A-2 Release, Unit A, Section 2, T-20-S, R-36-E, Lea County, New Mexico, NMOCD CASE #1R0427-62

Dear Mr. Price:

Highlander Environmental Corp. (Highlander) submits the following 2007 Annual Groundwater Summary Report for the Rice Operating Company (ROC), A-2 Release, located in the Eunice Monument Eumont (EME) Salt Water Disposal System.

#### **Background**

On August 26, 2003, a release was discovered, 1,055 feet west of the A-2 Junction. According to the form C-141 (Initial) filed with the NMOCD, the release was due to a crack on a 6-inch asbestos/concrete line. An estimated 15 barrels of produced water was released. Regional groundwater information indicated that the depth to groundwater is approximately 50-90 feet below ground surface (bgs).

Initial soil sampling performed in April 2004, indicated residual subsurface chloride impact. On January 2, 2004, a hollow stem auger unit was utilized to conduct one soil boring at the leak source area at the site. Chloride concentrations did not decline with depth, and the site was disclosed to the OCD as a site with potential groundwater impact on January 14, 2004. The soil boring was backfilled with bentonite and drill cuttings.

On July 21, 2006, ROC submitted an ICP to Mr. Wayne Price of the NMOCD-Santa Fe office for review. Mr. Price approved the ICP in a letter dated August 9, 2006.

Between October 10 and October 20, 2006, Highlander personnel were onsite to oversee the installation of three monitor wells (MW-1 through MW-3) within, up, and down gradient of the release area. Visual measurements of the site indicated the release area was approximately 25 feet by 25 feet. Soil samples were collected every 5 feet utilizing a split spoon sampler, and field screened for chlorides. Selected samples were placed in laboratory supplied containers and delivered under chain-of-custody control for chloride analysis by EPA method 300.0. Analytical results indicated the subsurface soils in monitor well MW-1 exhibited only slightly elevated chlorides, primarily confined to near surface. Monitor wells had soil concentrations of greater than 250 mg/kg at the saturated zone approximately 40 feet bgs, indicating an impact from the regional groundwater.

The initial groundwater sampling (November 1, 2006) for the three monitor wells showed elevated chloride levels ranging from 2,950 mg/L in MW-2 (downgradient) to 4,250 mg/L in MW-3 (upgradient). In addition, TDS ranged from 4,990 mg/L in MW-2 to 7,680 mg/L in MW-3. The BTEX concentrations were below reporting limits for each of the monitor wells. In comparing the chloride concentration analysis data with other water quality in the area, specifically the ROC EME D-1 (AP-67), which is directly downgradient of the Climax Chemical Plant Site, it appears the chloride concentrations at the site are consistent with regional groundwater in the area. The EME D-1 data indicates the background chloride concentrations range from 7,910 mg/L to 12,900 mg/L in areas outside the initial release area.

On May 22, 2007, ROC submitted a Corrective Action Plan (CAP) for the site to Mr. Wayne Price of the NMOCD-Santa Fe office for review. The CAP proposed preparation and revegetation of the surface soils in order to provide an infiltration barrier. Based on a visual inspection and subsurface drilling, the area of the release to be revegetated is approximately 25 feet by 25 feet. Mr. Price approved the CAP in a meeting with ROC and Highlander on July 18, 2007, with the exception that the clay liner be installed at a depth of 4 feet bgs instead of the proposed 3 feet bgs.

Between October 11 and October 29, 2007, ROC oversaw the excavation and removal of the overburden around the source release area. An area measuring 25 feet by 25 feet by 5 feet deep was excavated with approximately 96 cubic yards of soil transported offsite for disposal at the Sundance disposal facility in Eunice, New Mexico. The remaining excavated soils were blended with clean soil and tested for chlorides. The laboratory sample result indicated the chloride levels were 880 mg/kg, which is conducive for growing native grasses. Prior to backfilling of the excavation, a one foot thick clay layer was placed in the bottom of the excavation and compacted. The density of the compacted clay measured 94.9%. Upon completion of the compaction, the blended soils were placed back within the excavation and brought up to grade. On November 6, 2007, the entire disturbed area (approximately 9,000 square feet) was reseeded with native vegetation and is monitored for growth.

Midland, Texas

#### **Monitor Well Sampling**

The monitor wells were sampled on a quarterly basis. Prior to sampling, the monitor wells were gauged and approximately three casing volumes of water were purged from the wells prior to sampling. The pump and associated tubing were decontaminated with a laboratory grade detergent and rinsed with deionized water. Cumulative water level measurements and purge volumes for the monitor wells are included in the Tables Section of this report.

The wells were also inspected for the presence of phase-separated hydrocarbons (PSH). Groundwater samples were collected as soon as possible after the groundwater returned to its static level. Groundwater samples were collected using clean disposable polyethylene bailers and disposable line. The samples were transferred into labeled and preserved containers provided by the laboratory. The samples were delivered under proper chain-of-custody control to Environmental Labs of Texas, Inc., Odessa, Texas and/or Cardinal Labs of Hobbs, New Mexico. The groundwater samples were analyzed for major anions, by methods 310.1, 9253 and 375.4, cations by method 6010B, Total Dissolved Solids (TDS) by method 160.1 and Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) by method EPA 8021B. Copies of the laboratory reports are enclosed in Appendix A.

#### **Monitor Well Sample Results**

The chloride concentrations for the three monitor wells were elevated throughout the year and have ranged from a low of 2,500 mg/L in downgradient MW-2 in December 2007 to 8,750 mg/L in upgradient MW-3 in February 2007. The chloride concentrations for the three wells were relatively stable throughout the year. The water quality shows background levels throughout the site with some upgradient groundwater degradation in MW-3. In comparing the chloride concentration analysis data with other water quality in the area, specifically the ROC EME D-1, it appears the chloride concentrations at the site are consistent with regional groundwater degradation in the area. The EME D-1 data indicates the TDS ranges from 7,910 mg/L to 12,900 mg/L in areas outside the initial release area.

In 2007, there were no BTEX constituents detected at or above reporting limits for any of the monitor wells. Cumulative analytical data is summarized in the Table Section of this report.

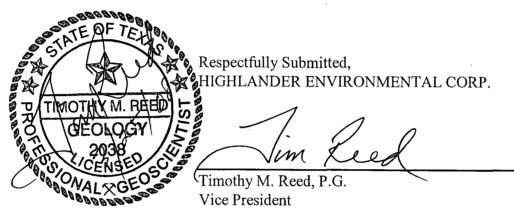
#### **Conclusions**

- 1. In 2007, there were no BTEX constituents at or above the New Mexico Water Quality Control Commission (WQCC) standards.
- 2. Chloride concentrations for the three monitor wells were elevated through the year and have ranged from a low of 2,500 mg/L in downgradient MW-2 to 8,750 mg/L in upgradient MW-3 throughout the year. The water quality shows background levels throughout the site with some upgradient



groundwater degradation in MW-3. In comparing the chloride concentration analysis data with other water quality in the area, specifically the ROC EME D-1 (AP-67), which is directly downgradient of the Climax Chemical Plant Site, it appears the chloride concentrations at the site are consistent with regional groundwater degradation in the area. The EME D-1 data indicates the background chloride concentrations range from 7,910 mg/L to 12,900 mg/L in areas outside the initial release area.

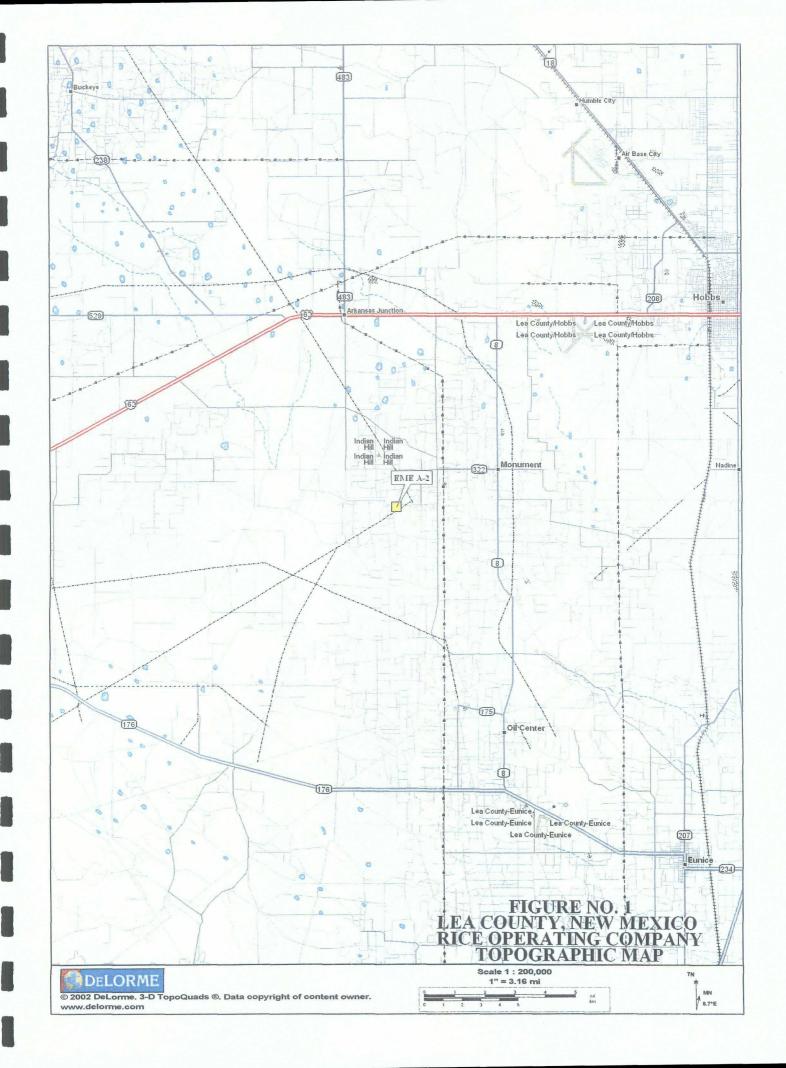
3. For 2008, quarterly monitoring at this site will continue and an annual report will be prepared and submitted to the NMOCD.

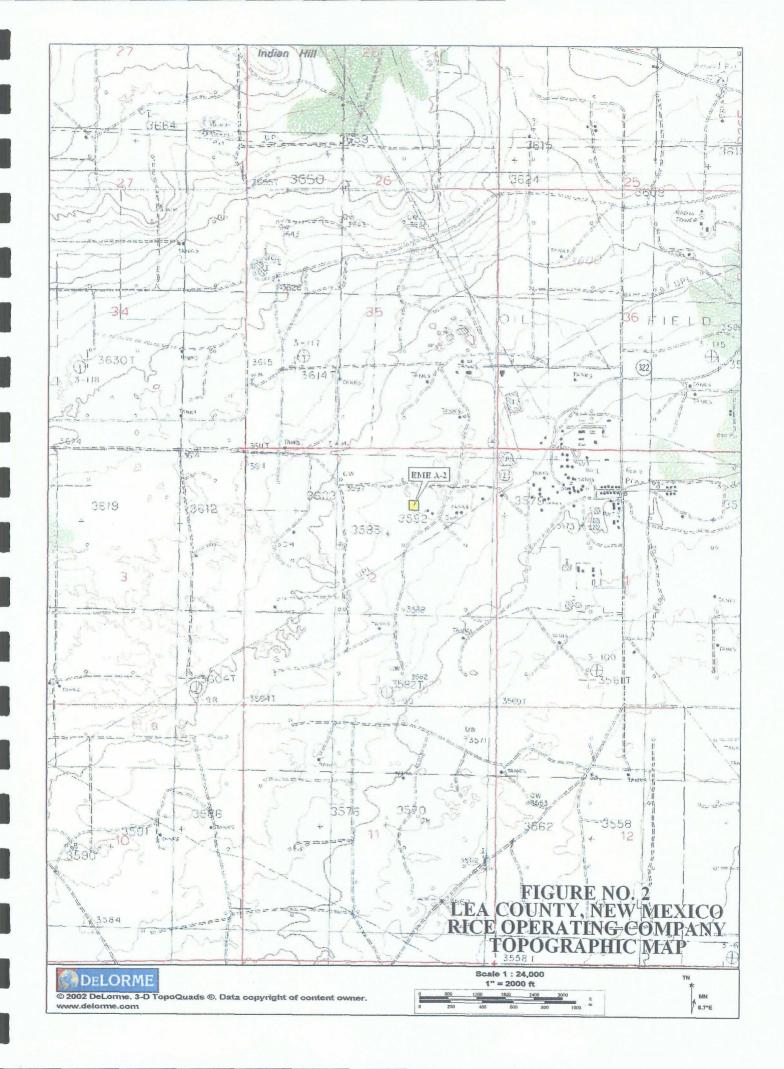


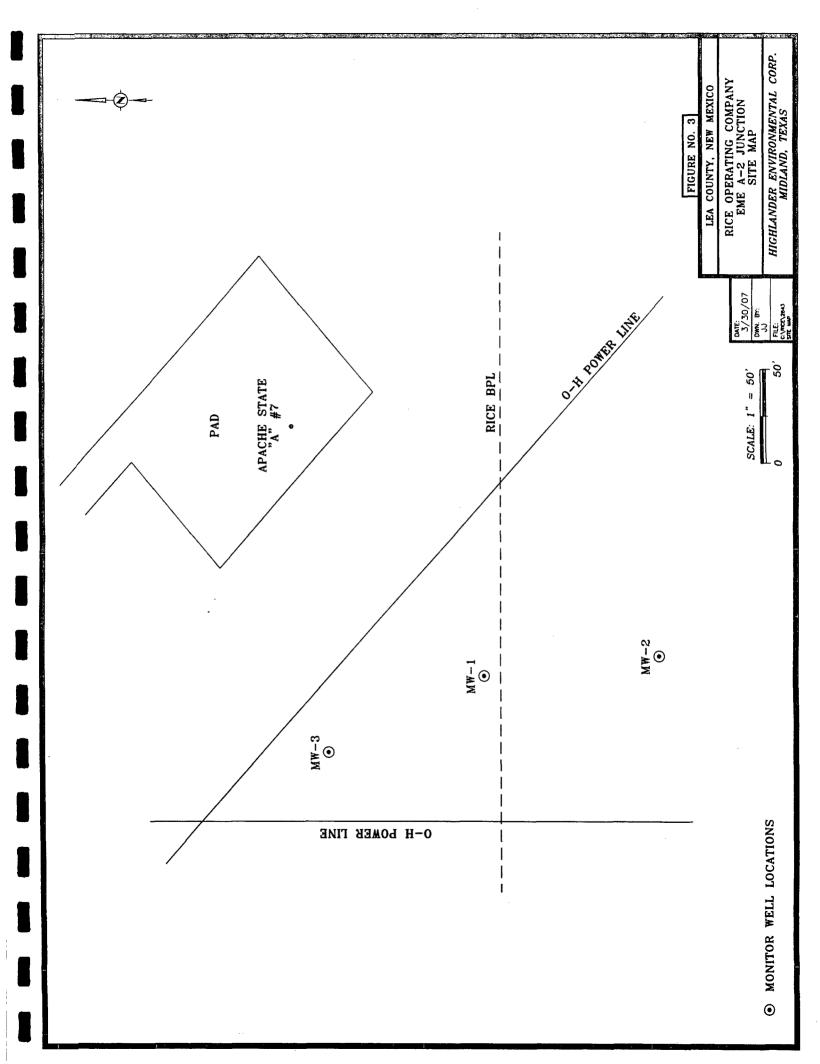
cc: ROC, Edward Hansen - NMOCD

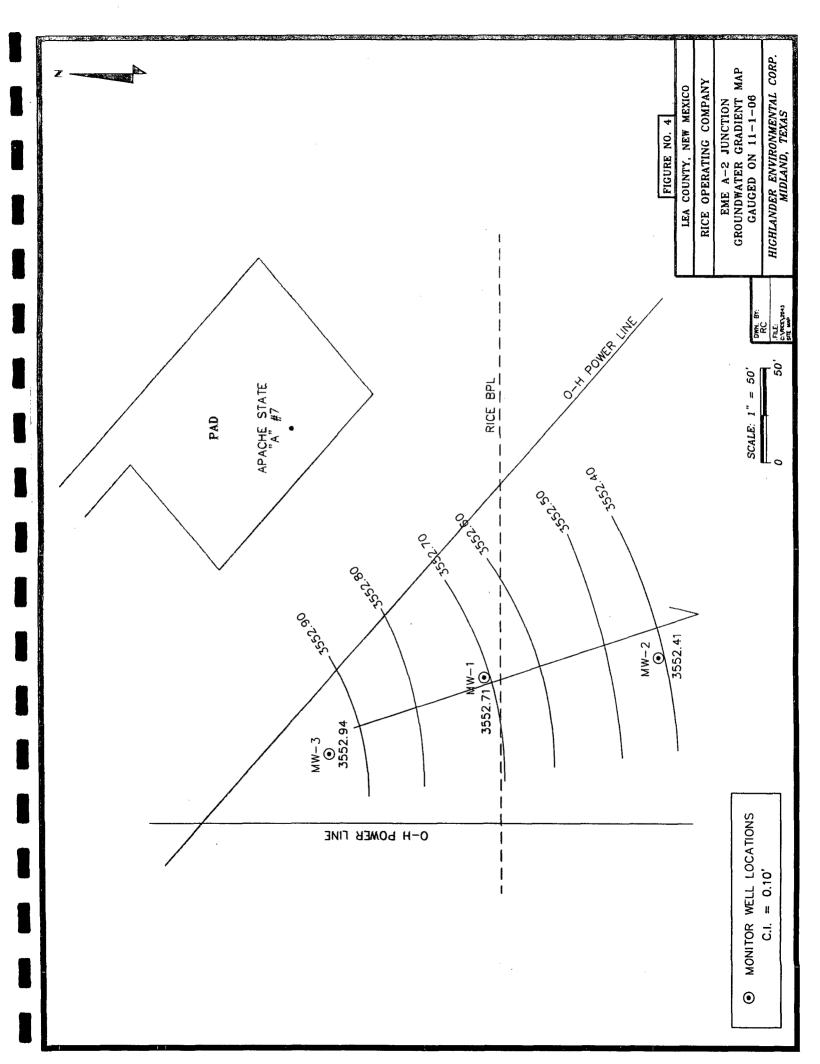
Enclosures: Figures, Tables, Laboratory Analysis

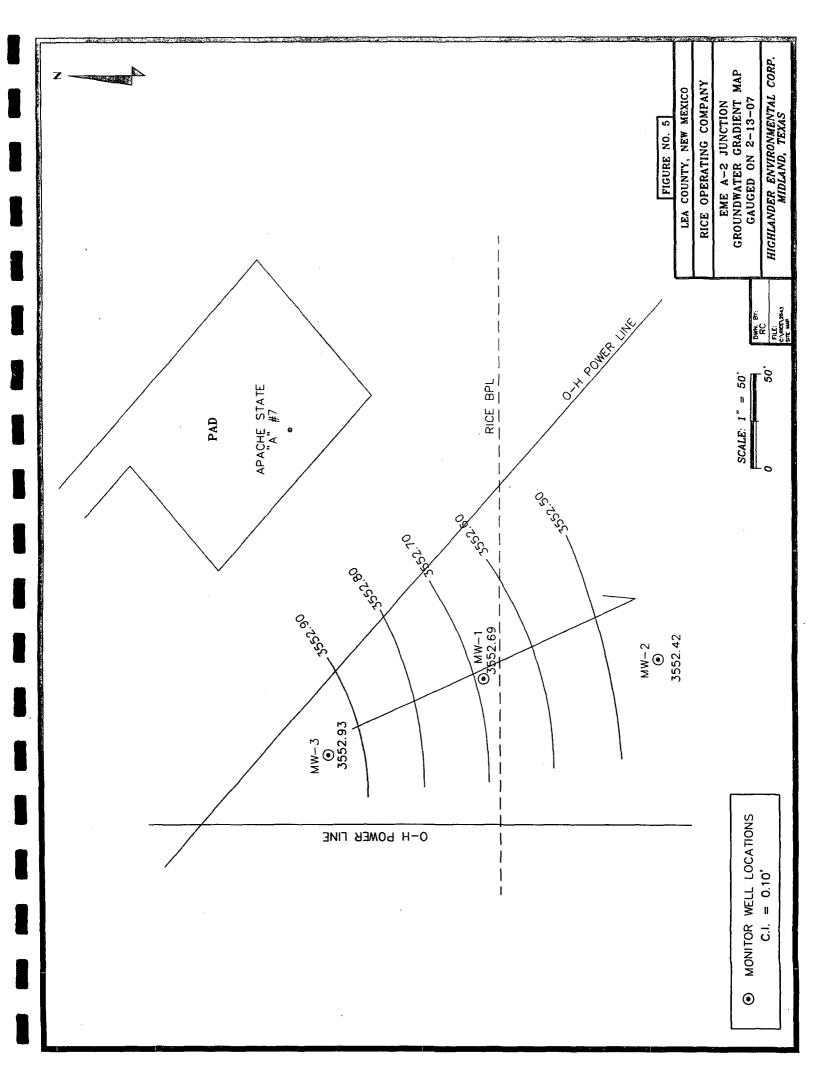
FIGURES

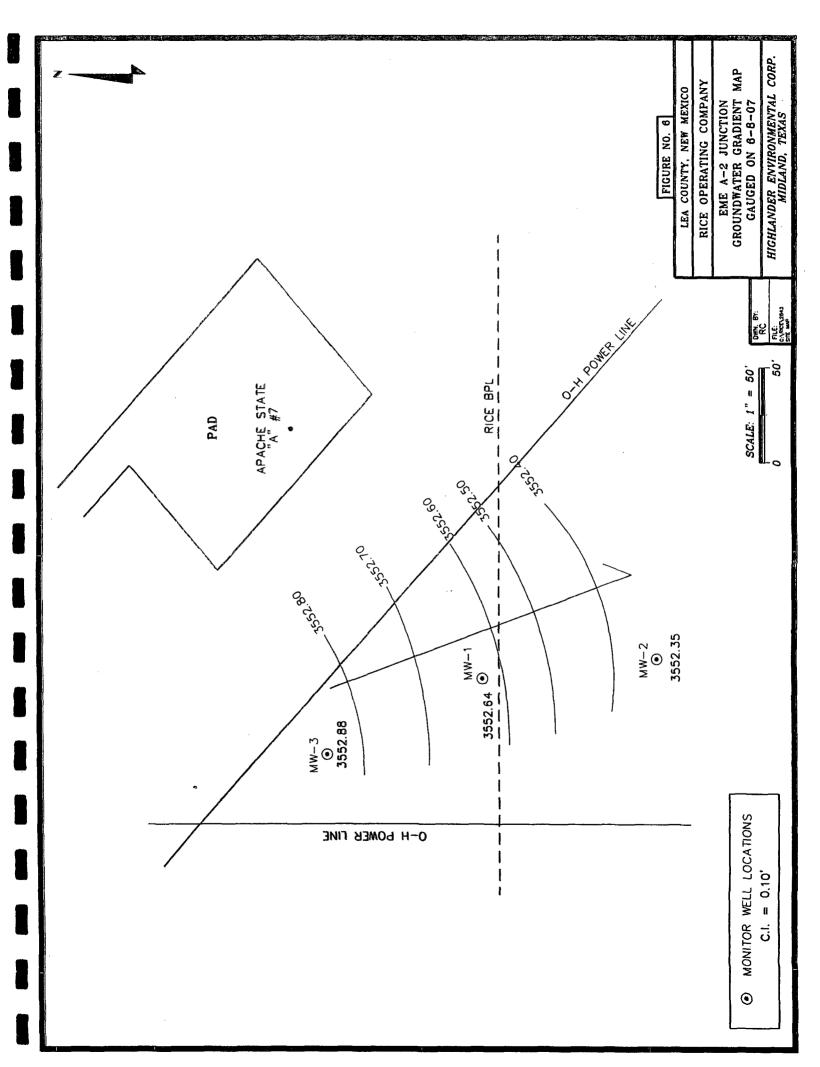


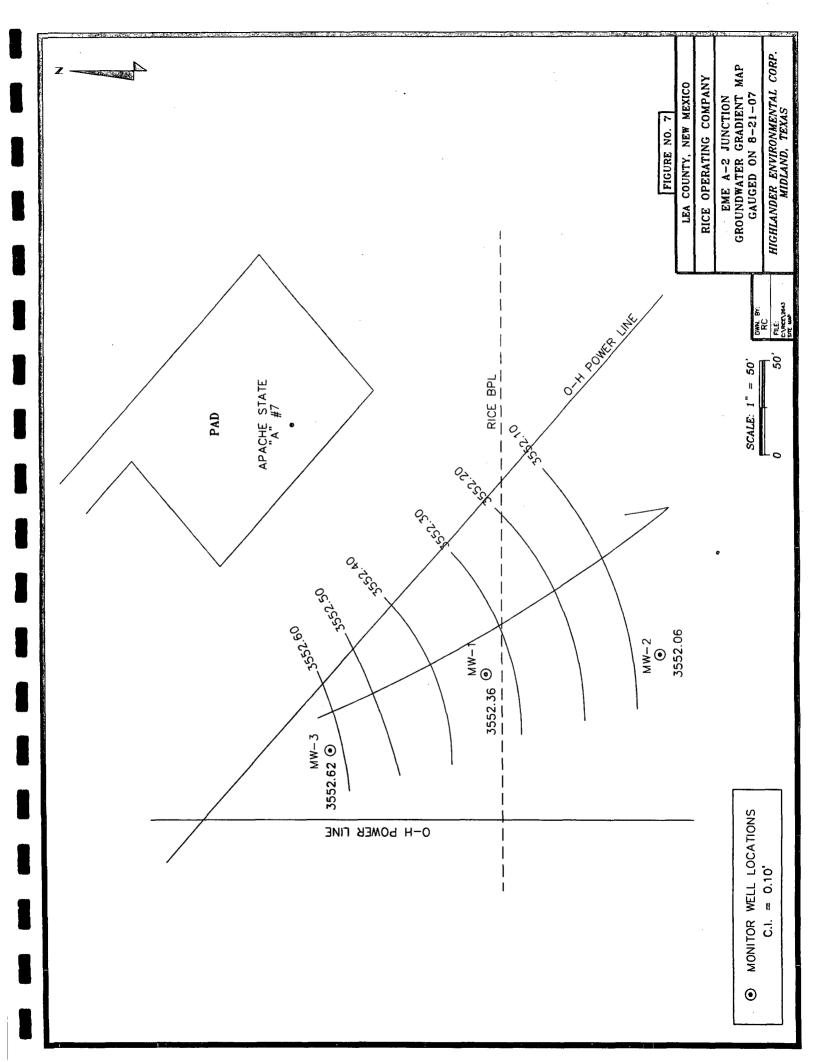


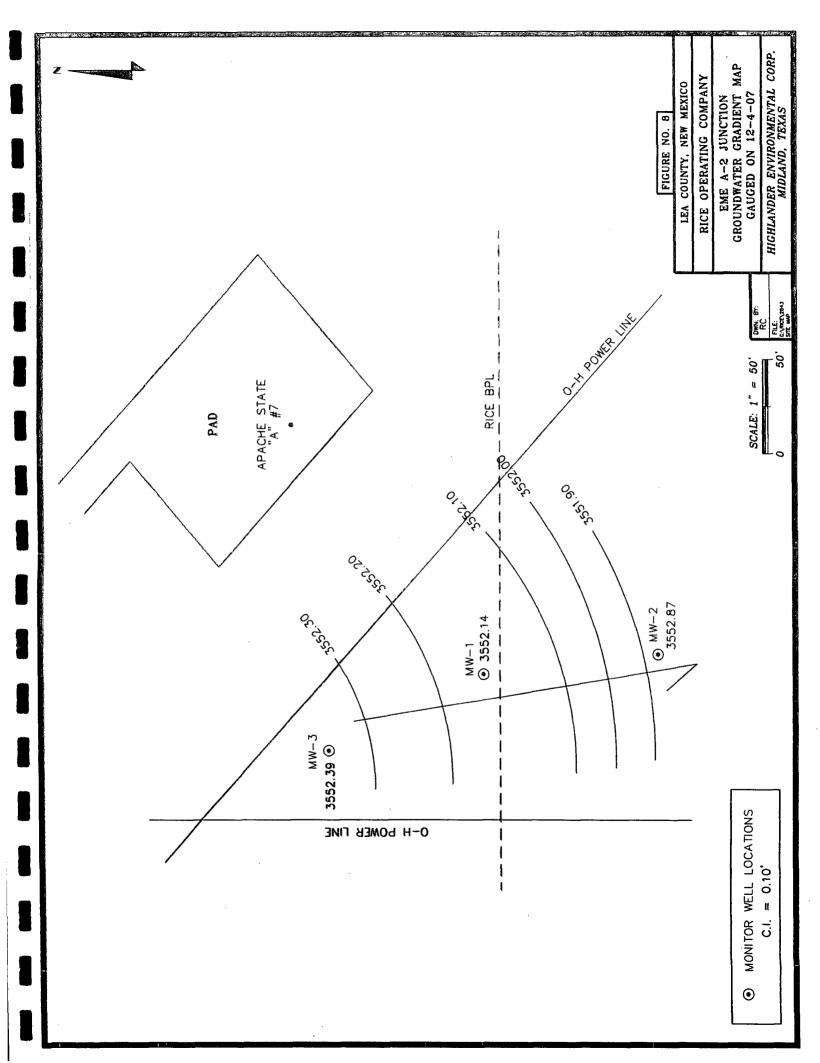






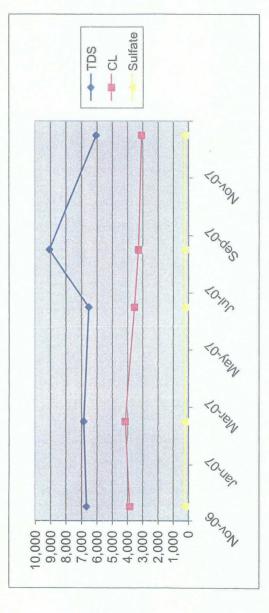




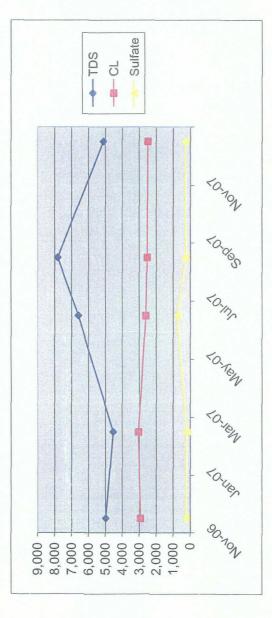




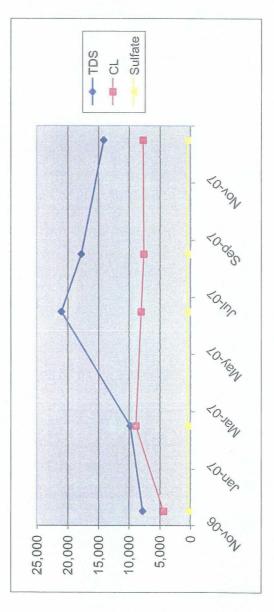
	Benzene   Toluene   Ethyl Benzene   Total Xylenes   Sulfate   Comments		225 Clear no odor	222 Clear no odor	225 Clear no odor	249 Clear no odor	235 Clear no odor	
	Total Xylenes   Su		<0.001				<0.003	
		Ethyl Benzene		<0.001	<0.001	<0.001	<0.004	<0.001
ס		Toluene		<0.001		<0.001		<0.001
Rice Engineering Operating EME Jct. A-2	Lea County, New Mexico	Benzene		<0.001	<0.001	<0.001	<0.004	<0.001
ngineering Ope EME Jct. A-2	ounty, N	TDS		6,650	6,830	3,510 6,510	9,045	6,033
Rice Er	LeaC	Ö		3,820 6,650	4,120 6,830	3,510	3,239	3,050
		Sample	Date	11/01/06	02/13/07	06/08/07	08/21/07	12/04/07
		Volume	Purged	9	9	9	9	9
		Well	Volume	1.70	1.70	1.70	1.60	1.60
		Total	Depth	54.18	54.16	54.16	54.16	54.16
		Depth to	Water	43.74	43.76	43.81	44.09	44.31
		MM		_	_	_	_	_



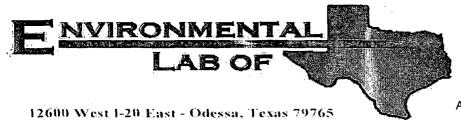
			Comments		241 Clear no odor	Clear no odor	740 Clear no odor	Clear no odor	Clear no odor
			Sulfate		241	226	740	268	292
			Total Xylenes		<0.001	<0.001	<0.001	<0.012	<0.003
			Benzene   Toluene   Ethyl Benzene   Total Xylenes   Sulfate   Comments		<0.001	<0.001	<0.001	<0.004	<0.001
D			Toluene		<0.001	<0.001	<0.001	<0.004	<0.001
Rice Engineering Operating	A-2	Lea County, New Mexico	Benzene		<0.001	<0.001	<0.001	<0.004	<0.001
gineerin	EME Jct. A-2	ounty, Ne	CI TDS		4,990	4,540	0,600	7,819	5,111
Rice En		Lea Co	Ö		2,950	3,060	2,630	2,549	2,500
			Sample	Date	11/01/06 2,950	02/13/07	20/80/90	08/21/07	12/04/07
			Volume	Purged	9	9	9	9	9
			Well	Volume	1.80	1.80	1.80	1.70	1.70
			Total	Depth	54.34	54.30	54.30	54.30	54.30
			Depth to	Water	43.08	43.07	43.14	43.43	43.62
			MW		2	2	2	2	2



		Benzene   Toluene   Ethyl Benzene   Total Xylenes   Sulfate   Comments		<0.001 232 Clear no odor	<0.001 376 Clear no odor	<0.001   450   Clear no odor	<0.012 432 Clear no odor	<0.003 411 Clear no odor	
			Ethyl Benzene Tot		<0.001	<0.001	<0.001	<0.004	<0.001
0			Toluene		<0.001	<0.001	<0.001	<0.004	<0.001
g Operatin	A-2	ew Mexico	Senzene		<0.001	<0.001	<0.001	<0.004	<0.001
gineering	Rice Engineering Operating EME Jct. A-2 Lea County, New Mexico	ounty, Ne	TDS		4,250 7,680	8,750 9,740	7,900 21,000	7,448   17,755	7.600   14.088
Rice Er		Lea C	Ö		4,250	8,750	7,900	7,448	7.600
			Sample	Date	11/01/06	02/13/07	06/08/07	08/21/07	12/04/07
			Volume	Purged	8	8	8	80	00
			Well	Volume	2.00	2.00	2.00	2.00	2.00
			Total	Depth	55.14	55.14	55.14	55.14	55.14
			Depth to	Water	42.34	42.35	42.40	42.66	42.89
			MW		3	3	3	3	8



#### APPENDIX A



A Xenco Laboratories Company

## Analytical Report

#### Prepared for:

Kristin Farris-Pope Rice Operating Co. 122 W. Taylor Hobbs, NM 88240

Project: EME A-2 Leak

Project Number: None Given

Location: T20S R36E Sec 2 A ~ Lea County New Mexico

Lab Order Number: 7B16008

Report Date: 02/28/07

Project: EME A-2 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	7B16008-01	Water	02/13/07 10:20	02-16-2007 09:40
Monitor Well #2	7B16008-02	Water	02/13/07 09:35	02-16-2007 09:40
Monitor Well #3	7B16008-03	Water	02/13/07 11:25	02-16-2007 09:40

Project: EME A-2 Leak

Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

#### Organics by GC Environmental Lab of Texas

		Reporting						ti .	
Analyte	Result	Limit '	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7B16008-01) Water									
Benzene	ND	0.00100	mg/L	i	EB72104	02/21/07	02/22/07	EPA 8021B	
Toluene	ND	0.00100	"	. **	11	"	н	"	
Ethylbenzene	ND	0.00100	"	* .	11	11	11	"	
Xylene (p/m)	ND	0.00100	,,	"	11	**	ŧ	n	
Xylene (o)	ND	0.00100	"	"	n	n	H	"	
Surrogate: a,a,a-Trifluorotoluene		110 %	80-12	20	"	"	"	n	
Surrogate: 4-Bromofluorobenzene		119 %	80-12	20		"	"	"	
Monitor Well #2 (7B16008-02) Water									
Benzene	ND	0.00100	mg/L	1	EB72104	02/21/07	02/22/07	EPA 8021B	
Toluene	ND	0.00100	"	ii .	"	,,	**	"	
Ethylbenzene	ND	0.00100	11	n	11	. 11	п	"	
Xylene (p/m)	ND	0.00100	· "	u u	n	11	Ħ	11	
Xylene (o)	ND	0.00100	11	н	"	11	*	**	
Surrogate: a,a,a-Trifluorotoluene		106 %	80-12	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	80-12	20	"	"	"	n	
Monitor Well #3 (7B16008-03) Water									
Benzene	ND	0.00100	mg/L	1	EB72104	02/21/07	02/22/07	EPA 8021B	
Toluene	ND	0.00100	н	п	п	11	19	11	
Ethylbenzene	ND	0.00100	н	. "		11	11	Ü	
Xylene (p/m)	ND	0.00100	11	н	**	11	19	li	
Xylene (o)	ND	0.00100	"	lı .	н	**	**	#	
Surrogate: a,a,a-Trifluorotoluene		105 %	80-12	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	80-12	20	"	"	"	"	

Project: EME A-2 Leak

Fax: (505) 397-1471

122 W. Taylor

Project Number: None Given

Hobbs NM, 88240

Project Manager: Kristin Farris-Pope

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

			· · · · · · · · · · · · · · · · · · ·						
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
Monitor Well #1 (7B16008-01) Water									
Total Alkalinity	300	2.00	mg/L	1	EB71701	02/17/07	02/17/07	EPA 310.1M	
Chloride	4120	50.0	"	100	EB72203	02/22/07	02/22/07	EPA 300.0	
Total Dissolved Solids	6830	10.0	n	i	EB72001	02/16/07	02/17/07	EPA 160.1	
Sulfate	222	50.0	11	100	EB72203	02/22/07	02/22/07	EPA 300.0	
Monitor Well #2 (7B16008-02) Water									
Total Alkalinity	216	2.00	mg/L	1	EB71701	02/17/07	02/17/07	EPA 310.1M	
Chloride	3060	50.0	"	100	EB72203	02/22/07	02/22/07	EPA 300.0	
Total Dissolved Solids	4540	10.0		1	EB72001	02/16/07	02/17/07	EPA 160.1	
Sulfate	226	50.0	"	100	EB72203	02/22/07	02/22/07	EPA 300.0	
Monitor Well #3 (7B16008-03) Water									
Total Alkalinity	260	2.00	mg/L	1	EB71701	02/17/07	02/17/07	EPA 310.1M	
Chloride	8750	100		200	EB72203	02/22/07	02/22/07	EPA 300.0	
Total Dissolved Solids	9740	10.0	п	1	EB72001	02/16/07	02/17/07	EPA 160.1	
Sulfate	376	100	n	200	EB72203	02/22/07	02/22/07	EPA 300.0	

Project: EME A-2 Leak

Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

#### Total Metals by EPA / Standard Methods

#### **Environmental Lab of Texas**

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7B16008-01) Water									
Calcium	945	20.2	mg/L	250	EB72209	02/22/07	02/22/07	EPA 6010B	
Magnesium	364	9.00	n	н	"	"	n	"	
Potassium	17.7	3.00	н	50	u	"	n	п	
Sodium	921	10.8	п	250	"	"	"		
Monitor Well #2 (7B16008-02) Water									
Calcium	704	20.2	mg/L	250	EB72209	02/22/07	02/22/07	EPA 6010B	
Magnesium	202	1.80	n	50	"	"	**	11	
Potassium	13.2	0.600	"	10		"	n	'n	
Sodium	823	10.8	II .	250	*	н	н	n	
Monitor Well #3 (7B16008-03) Water	•								
Calcium	1990	81.0	mg/L	1000	EB72209	02/22/07	02/22/07	EPA 6010B	
Magnesium	791	9.00	q	250	n	11	n	Ü	
Potassium	21.9	3.00	п	50	n	, 11	"	0	
Sodium	1560	43.0	н	1000	н	"	п	ti	

Project: EME A-2 Leak

Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

#### Organics by GC - Quality Control Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EB72104 - EPA 5030C (GC)										
Blank (EB72104-BLK1)				Prepared: 0	2/21/07 A	nalyzed: 02	/22/07			
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	54.0		ug/l	50.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	59.2		n	50.0		118	80-120			
LCS (EB72104-BS1)				Prepared: 0	2/21/07 A	nalyzed: 02	2/22/07			
Benzene	0.0592	0.00100	mg/L	0.0500		118	80-120			
Toluene	0.0557	0.00100	**	0.0500		111	80-120			
Ethylbenzene	0.0564	0.00100	"	0.0500		113	80-120			
Xylene (p/m)	0.111	0.00100	**	0.100		111	80-120			
Xylene (o)	0.0500	0.00100	"	0.0500		100	80-120			
Surrogate: a,a,a-Trifluorotoluene	55.5		ug/l	50.0		111	80-120			
Surrogate: 4-Bromofluorobenzene	58.8		n	50.0		118	80-120			
Calibration Check (EB72104-CCV1)				Prepared: 0	)2/21/07 A	nalyzed: 02	2/23/07			
Benzene	50,0		ug/l	50.0		100	80-120			
Toluene	46.9		n	50.0		93.8	80-120			
Ethylbenzene	48.8	•	n	50.0		97.6	80-120			
Xylene (p/m)	95.2		"	100		95.2	80-120			
Xylene (o)	42.7		11	50.0		85.4	80-120			
Surrogate: a,a,a-Trifluorotoluene	47.7		"	50.0		95.4	80-120			
Surrogate: 4-Bromofluorobenzene	54.6		"	50.0		109	80-120			
Matrix Spike (EB72104-MS1)	Sou	ırce: 7B16006-	01	Prepared: (	)2/21/07 A	nalyzed: 02	2/23/07			
Benzene	0.0507	0.00100	mg/L	0.0500	ND	101	80-120		***************************************	
Toluene	0.0463	. 0.00100	"	0.0500	ND	92.6	80-120			
Ethylbenzene	0.0470	0.00100	"	0.0500	ND	94.0	80-120			
Xylene (p/m)	0.0930	0.00100	**	0.100	ND	93.0	80-120			
Xylene (o)	0.0408	0.00100	"	0.0500	ND	81.6	80-120			
Surrogate: a,a,a-Trifluorotoluene	45.6		ug·l	50.0	·	91.2	80-120			
Surrogate: 4-Bromofluorobenzene	48.9		"	50.0		97.8	80-120			

Rice Operating Co. 122 W. Taylor

Hobbs NM, 88240

Project: EME A-2 Leak

Project Number: None Given

Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

#### Organics by GC - Quality Control

<b>Environmental Lab of Texas</b>	

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB72104 - EPA 5030C (GC)		· .								
Matrix Spike Dup (EB72104-MSD1)	Sou	rce: 7B16006-	01	Prepared: 0	)2/21/07 A	nalyzed: 02	/23/07			•
Benzene	0.0513	0.00100	mg/L	0.0500	ND	103	80-120	1.96	20	
Toluene	0.0482	0.00100	"	0.0500	ND	96.4	80-120	4.02	20	
Ethylbenzene	0.0492	0.00100	"	0.0500	ND	98.4	80-120	4.57	20	
Xylene (p/m)	0.0969	0.00100	"	0.100	ND	96.9	80-120	4.11	20	
Xylene (o)	0.0426	0.00100	"	0.0500	ND	85.2	80-120	4.32	20 ′	
Surrogate: a,a,a-Trifluorotoluene	44.3		ug/l	50.0		88.6	80-120			
Surrogate: 4-Bromofluorobenzene	53.3		"	50.0		107	80-120			

Project: EME A-2 Leak

Fax: (505) 397-1471

122 W. Taylor Hobbs NM, 88240 Project Number: None Given
Project Manager: Kristin Farris-Pope

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 EB71701 - General Preparation	on (WetChem)							,		
Blank (EB71701-BLK1)			-	Prepared &	k Ańalyzed	: 02/17/07		., .		
Total Alkalinity	ND	2.00	mg/L						***************************************	
LCS (EB71701-BS1)				Prepared &	& Analyzed	: 02/17/07				
Fotal Alkalinity	192	2.00	mg/L				85-115			
Bicarbonate Alkalinity	230	2.00	п	200		115	85-115			
Duplicate (EB71701-DUP1)	Sou	rce: 7B16006-	01	Prepared &	k Analyzed	: 02/17/07				
Total Alkalinity	280	2.00	mg/L		290		-	3.51	20	
Reference (EB71701-SRM1)				Prepared &	k Analyzed	: 02/17/07				
Total Alkalinity	264		mg/L	250		106	90-110			
Batch EB72001 - Filtration Prepara	tion									
Blank (EB72001-BLK1)	•			Prepared:	02/16/07 A	nalyzed: 02	2/17/07			
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (EB72001-DUP1)	Sou	rce: 7B16006-	01RE1	Prepared:	02/16/07 A	nalyzed: 02	2/17/07			
Total Dissolved Solids	6260	10.0	mg/L		5970			4.74	20	
Duplicate (EB72001-DUP2)	Sou	rce: 7B16009-	03RE1	Prepared: 02/16/07 Analyzed: 02/17/07						
Total Dissolved Solids	16900	10.0	mg/L		16900			0.00	20	
Batch EB72203 - General Preparation	on (WetChem)									
Blank (EB72203-BLK1)	<del></del>			Prepared &	& Analyzed	: 02/22/07				
Sulfate .	ND	0.500	ıng/L							
Chloride	ND	0.500	н							

122 W. Taylor

Hobbs NM, 88240

Project: EME A-2 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

		Reporting		Spike	Source	_	%REC	,	RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EB72203 - General Preparation (	WetChem)									
LCS (EB72203-BS1)				Prepared &	Analyzed:	02/22/07				
Chloride	10.7	0.500	mg/L	10.0		107	80-120			
Sulfate	11.1	0.500	n	10.0		111	80-120			
Calibration Check (EB72203-CCV1)				Prepared &	k Analyzed:	02/22/07				
Sulfate	10.3		mg/L	10.0		103	80-120			
Chloride	10.3		"	10.0		103	80-120			
Duplicate (EB72203-DUP1)	Sour	ce: 7B16008-	-02	Prepared &	k Analyzed:	02/22/07				
Sulfate	237	50.0	mg/L		226			4.75	20	
Chloride	3040	50.0	"		3060			0.656	20	
Duplicate (EB72203-DUP2)	Sour	ce: 7B16010-	-01	Prepared &	k Analyzed:	02/22/07				
Chloride	573	12.5	mg/L		587			2.41	20	
Sulfate	246	12.5	"		249			1.21	20	
Matrix Spike (EB72203-MS1)	Sour	ce: 7B16008-	-02	Prepared &	k Analyzed:	02/22/07				
Sulfate	1270	50.0	mg/L	1000	226	104	80-120			
Chloride	4180	50.0	u	1000	3060	112	80-120			
Matrix Spike (EB72203-MS2)	Sour	rce: 7B16010-	-01	Prepared &	k Analyzed:	02/22/07				
Chloride	872	12.5	mg/L	250	587	114	80-120			
Sulfate	527	12.5	n	250	249	111	80-120			

Project: EME A-2 Leak

Fax: (505) 397-1471

Project Number: None Given

Project Manager: Kristin Farris-Pope

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EB72209 - 6010B/No Digestion										
Blank (EB72209-BLK1)				Prepared &	Analyzed:	02/22/07				
Calcium	ND	0.0810	mg/L							-
Magnesium	ND	0.0360	"							
Potassium	ND	0.0600	n							
Sodium	ND	0.0430	"							
Calibration Check (EB72209-CCV1)				Prepared &	Analyzed:	02/22/07				
Calcium	2.08		mg/L	2.00		104	85-115			
Magnesium	1.80		"	2.00		90.0	85-115			
Potassium	1.75		11	2.00		87.5	85-115			
Sodium	1.79		11	2.00		89.5	85-115			
Duplicate (EB72209-DUPI)	Sou	rce: 7B16006-	01	Prepared &	Ł Analyzed:	02/22/07				
Calcium	346	20.2	mg/L		360			3.97	20	
Magnesium	182	1.80	n		183			0.548	20	
Potassium	50.4	0.600	н		38.2			27.5	20	
Sodium	1800	21.5	n		1980			9.52	20	

Rice Operating Co.

Project: EME A-2 Leak
Fax: (505) 397-1471

122 W. Taylor
Project Number: None Given
Project Manager: Kristin Farris-Pope

#### Notes and Definitions

R2 The RPD exceeded the acceptance limit. Analyte DETECTED DET Analyte NOT DETECTED at or above the reporting limit ND NR Not Reported đгу Sample results reported on a dry weight basis RPD Relative Percent Difference LCS Laboratory Control Spike MS Matrix Spike

Duplicate

Dup

Report Approved By:

Date:

2/28/2007

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

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 10 of 10

# Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800 Fax: 432-563-1713 Odessa, Texas 79765 12600 West 1-20 East

TAT brabhasts × × Lone Star NPDES ပ္ TAT (Pie-Schedule) 24, 48, 72 hrs Project Loc: T20S R36E Sec2 A ~ Lea County New Mexico Total Dissolved Solids × × × 10 TRRP M.A.O.M. Sample Containers Intact? Sample Hand Delivered by Sample Collect Rep. ?
by Courier UPS DHL ЮF Labels on contamer(s)
Custody seals on container(s)
Custody seals on cooler(s) Temperature Upon Receipt: EME A-2 Leak VOCs Free of Headspace? × BLEX 8051B/2030 × Laboratory Comments: selitstovimeS Analyze Volatiles (BTEX-N 8260) X Standard Weisja: Ya Ya ga Cq Ct bp Ha 2e TOTAL SVB / ESB / CEC Anions (Cl. SO4, Alkalinity) × PO # Project Name: × × × Project#: Report Format: 800t XT 07.6 Time me **8012B** M2108 1.814 :HdJ გ ŠĶ გ 2/10/07 Date Date Other (Specify) rozanne@valornet.com None (1) 1 Liter HOPE COZSZ6N rozanne@valornet.com HOPN (505) 397-1471 os<sup>z</sup>H HCI (S) 40 ml diass vials N N EONH × otal #. of Containers m n m beretli Filtered Merina mare Fax No: e-mail: 10:20 9:35 mfranks@riceswd.com Time Sampled kpope@riceswd.com Received by ELOT 2/13/2007 2/13/2007 2/13/2007 Received by: Received by: Date Sampled Ending Depth Time 9:39 Hobbs, New Mexico 88240 RICE Operating Company ime rime Rozanne Johnson (505)631-9310 Reginning Depth kpope@riceswd.com 122 W. Taylor Street Kristin Farris Pope Date 2-16-67 Date Date (505) 393-9174 FIELD CODE 150000 Please email to: Company Address: Sampler Signature: Project Manager: Company Name →C'2- |Monitor Well #2 -0.3. Monitor Well #3 Monitor Well #1 Telephone No: City/State/Zip: Special Instructions: ozanne Johnson Relinquished by: Relinquished by (lab use only) ORDER #: 0 (Vino esu dei) # 8A.

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

nent: Kich			•	
Date/ Time: 216607 0940		•		*, *
ab ID#: 78(6008			•	
100000		• • • • • • •		
iltials: Dh				
Sample Receipt	Checklist			
1 Temperature of container/ cooler?				Cilent Initial
2 Shipping container in good conditions	Yes	No	-1.55 °C	348488888
o would be a straight of the s		્No ∈		1220334240
4 Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	340000000
2 * Unain of Cusiody present?	Yes	∂No ∦	Not Present	18340000
Sample instructions complete of Chair of Chair	Yes>	No		20102000000
Under of Custouy Signed When relinquished to an in-	Yes>	No		: William State
Worlding of Custody addees with sample labely to	(Yes)	No	10 10 10 10 AND	46348464
Container label(s) leable and intacto	Yes	No	ID written on Cont./ Lid	15-15-15
O Sample matrix/ properties agree with Chain of Custody?	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	No	Not Applicable	- 1/0 //ds
1 Containers supplied by ELOT?	∕∕res>	No		6 10 68
2 Samples in proper container/ bottle?	Yes	No	of the second of the se	V.52563859
3 Samples properly preserved?	Yes	No	See Below	3030000000
4 Sample bottles intact?	(Yes)	No	See Below	100,57,5000
5 Preservations documented on Chain of Custody?	(Yes)	No	200	90 6 3 COS 60
6 Containers documented on Chain of Custody?	Yes)	No		2002/2012/2012/
17 Sufficient sample amount for indicated test(s)?	(Yes)	No		2500/200
18 All samples received within sufficient hold time?	(Yes)	No	See Below	20022000
9 Subcontract of sample(s)?	(Yes)	No	See Below	YXXY###
(U (VI)) samples hour than had	-¥es ♭^	No	Not Applicable	
voo samples have zero neadspace?	(Yes)	No	Not Applicable	2000000
			ocrippiicable	
Variance Docum	entation			
Ontact: Contracted In				
Contacted by:		1.1	Date/ Time:	
egarding:				* 5 (2) (2006 <b>6</b> ) (2)
				- 15 (GA) (G
				1.7 (72)-300
prrective Action Taken:				1.00000
				•
				- 1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (
neck all that Apply: See attached e-mail/ fax		_		
Client understands and would Cooling process had begun at			•	
Cooling process had begun sh	like to proce	and with		



A Xenco Laboratories Company

## Analytical Report

#### **Prepared for:**

Kristin Farris-Pope Rice Operating Co. 122 W. Taylor Hobbs, NM 88240

Project: EME A-2 Leak

Project Number: None Given

Location: T20S R36E Sec2 A ~ Lea County New Mexico

Lab Order Number: 7F11016

Report Date: 06/27/07

Project: EME A-2 Leak

Fax: (505) 397-1471

122 W. Taylor Hobbs NM, 88240 Project Number: None Given
Project Manager: Kristin Farris-Pope

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	. Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well #1	7F11016-01	Water	06/08/07 10:40	06-11-2007 16:30
Monitor Well #2	7F11016-02	Water	06/08/07 09:55	06-11-2007 16:30
Monitor Well #3	7F11016-03	Water	06/08/07 11:45	06-11-2007 16:30

Project: EME A-2 Leak

Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

# Organics by GC Environmental Lab of Texas

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7F11016-01) Water		. <u></u> .							
Benzene	ND	0.00100	mg/L	1	EF71312	06/13/07	06/15/07	EPA 8021B	
Toluene	ND	0.00100	п .	"	. #	II .	**	n	
Ethylbenzene	ND	0.00100	"	**	tt.	н	**	n	
Xylene (p/m)	ND	0.00100	n	"	n	n	*	n	
Xylene (o)	ND	0.00100	tt	"	n	n	и	"	
Surrogate: a,a,a-Trifluorotoluene		99.0 %	80-12	20	"	n	"	и	
Surrogate: 4-Bromofluorobenzene		86.6 %	80-12	20		"	"	"	
Monitor Well #2 (7F11016-02) Water									
Benzene	ND	0.00100	mg/L	1	EF71312	06/13/07	06/15/07	EPA 8021B	
Toluene	ND	0.00100	n	Ħ	11	11	и	н	
Ethylbenzene	ND	0.00100	"	"	II	n	11	"	
Xylene (p/m)	ND	0.00100	H	**	"	11	ч	n	
Xylene (o)	ND	0.00100	H	н	11	11	u	n	
Surrogate: a,a,a-Trifluorotoluene		99.2 %	80-12	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.8 %	80-İ	20	<i>u</i> .	" .	n	<b>"</b>	
Monitor Well #3 (7F11016-03) Water									
Benzene	ND	0.00100	mg/L	ı	EF71312	06/13/07	06/15/07	EPA 8021B	
Toluene	ND	0.00100	It	tr	n	,,	н	н	
Ethylbenzene	ND	0.00100	п	h	Ħ	•	n	n	
Xylene (p/m)	ND	0.00100	11	п	11	"	n	H	
Xylene (o)	ND	0.00100	11	11	н		ıı	п	
Surrogate: a,a,a-Trifluorotoluene		101 %	80-12	20	"	"	"	n	
Surrogate: 4-Bromofluorobenzene		89.8 %	80-12	20	"	"	"	"	

Project: EME A-2 Leak

122 W. Taylor

Project Number: None Given

Fax: (505) 397-1471

Hobbs NM, 88240

Project Manager: Kristin Farris-Pope

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

								<del></del>	
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7F11016-01) Water									
Total Alkalinity	230	2.00	mg/L	1	EF71403	06/14/07	06/14/07	EPA 310.1M	
Chloride	3510	50.0	11	100	EF71504	06/15/07	06/15/07	EPA 300.0	
Total Dissolved Solids	6510	10.0	**	1	EF71519	06/12/07	06/15/07	EPA 160.1	
Sulfate	225	50.0	**	100	EF71504	06/15/07	06/15/07	EPA 300.0	
Monitor Well #2 (7F11016-02) Water									
Total Alkalinity	280	2.00	mg/L	1	EF71403	06/14/07	06/14/07	EPA 310.1M	
Chloride	2630	500	н	1000	EF71504	06/15/07	06/15/07	EPA 300.0	
Total Dissolved Solids	6600	10.0	"	1	EF71520	06/13/07	06/15/07	EPA 160.1	
Sulfate	740	500	11	1000	EF71504	06/15/07	06/15/07	EPA 300.0	
Monitor Well #3 (7F11016-03) Water									
Total Alkalinity	190	2.00	ıng/L	ı	EF71403	06/14/07	06/14/07	EPA 310.1M	
Chloride	7900	100	•	200	EF71504	06/15/07	06/15/07	EPA 300.0	
Total Dissolved Solids	21000	10.0	11	1	EF71520	06/13/07	06/15/07	EPA 160.1	
Sulfate	450	100	**	200	EF71504	06/15/07	06/15/07	EPA 300.0	

Project: EME A-2 Leak

Fax: (505) 397-1471

122 W. Taylor Hobbs NM, 88240 Project Number: None Given
Project Manager: Kristin Farris-Pope

### Total Metals by EPA / Standard Methods Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7F11016-01) Water									
Calcium	783	40.5	mg/L	500	EF71902	06/19/07	06/19/07	EPA 6010B	
Magnesium	295	3.60	"	100	11	**	11	. "	
Potassium	12.3	0.600	11	10	н	11	n	"	
Sodium	667	21.5	"	500	Ħ	**	п	"	
Monitor Well #2 (7F11016-02) Water									
Calcium	541	40.5	mg/L	500	EF71902	06/19/07	06/19/07	EPA 6010B	
Magnesium	213	1.80	11	50	rr	H	н	11	
Potassium	8.16	3.00	*1	п	u	11	,,	п	
Sodium	453	21.5	11	500	, ,,	n	н	n	
Monitor Well #3 (7F11016-03) Water									
Calcium	1680	40.5	mg/L	500	EF71902	06/19/07	06/19/07	EPA 6010B	
Magnesium	546	3.60	п	100	и	н	н	"	
Potassium	21.8	0.600	n	10	ıı .	п .	11	*	
Sodium	1830	21.5	"	500	п	11	n	**	

Rice Operating Co. 122 W. Taylor Hobbs NM, 88240 Project: EME A-2 Leak

Project Number: None Given
Project Manager: Kristin Farris-Pope.

Fax: (505) 397-1471

### Organics by GC - Quality Control Environmental Lab of Texas

Austria	Danie	Reporting	T I i.e.	Spike	Source	0/DEC	%REC	DDD	RPD	Mar
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EF71312 - EPA 5030C (GC)										
Blank (EF71312-BLK1)				Prepared: 0	6/13/07 A	nalyzed: 06	5/15/07			
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	н							
Ethylbenzene	ND	0.00100	n							
Xylene (p/m)	ND	0.00100	п							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	46.1		ug/l	50.0		92.2	80-120			
Surrogate: 4-Bromofluorobenzene	41.1		n	50.0		82.2	80-120			
LCS (EF71312-BS1)				Prepared: (	6/13/07 A	nalyzed: 06	5/15/07			
Benzene	0.0508	0.00100	mg/L	0.0500		102	80-120			
Toluene	0.0522	0.00100	"	0.0500		104	80-120			
Ethylbenzene	0.0541	0.00100	"	0.0500		108	80-120			
Xylene (p/m)	0.0945	0.00100	**	0.100		94.5	80-120			
Xylene (o)	0.0527	0.00100	**	0.0500		105	80-120			
Surrogate: a,a,a-Trifluorotoluene	49.2		ug/l	50.0		98.4	80-120	· · · · · · · · · · · · · · · · · · ·		
Surrogate: 4-Bromofluorobenzene	47,4		н	50.0		94.8	80-120			
Calibration Check (EF71312-CCV1)				Prepared: (	)6/13/07 A	nalyzed: 06	5/15/07			
Benzene	0.0493		mg/L	0.0500		98.6	80-120			
Toluene	0.0501		"	0.0500		100	80-120			
Ethylbenzene	0.0485		"	0.0500		97.0	80-120			
Xylene (p/m)	0.0906		"	0.100		90.6	80-120			
Xylene (o)	0.0506		**	0.0500		101	80-120			
Surrogate: a,a,a-Trifluorotoluene	48.6		ug·l	50.0		97.2	80-120		<del></del>	
Surrogate: 4-Bromofluorobenzene	46.8		"	50.0		93.6	80-120			
Matrix Spike (EF71312-MS1)	So	urce: 7F12005-	03	Prepared: (	06/13/07 A	nalyzed: 0	5/15/07			
Benzene	0.0494	0.00100	ıng/L	0.0500	ND	98.8	80-120			
Toluene	0.0505	0.00100	n	0.0500	ND	101	80-120			
Ethylbenzene	0.0534	0.00100	11	0.0500	ND	107	80-120			
Xylene (p/m)	0.0936	0.00100	n	0.100	ND	93.6	80-120			
Xylene (o)	0.0523	0.00100	"	0.0500	ND	105	80-120			
Surrogate: a,a,a-Trifluorotoluene	50.4		ug/l	50.0		101	80-120			
Surrogate: 4-Bromofluorohenzene	47.1		"	50.0		94.2	80-120			

122 W. Taylor Hobbs NM, 88240 Project: EME A-2 Leak

Project Number: None Given

Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

### Organics by GC - Quality Control Environmental Lab of Texas

		-								
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EF71312 - EPA 5030C (GC)		<u>.</u>					<u>.</u>			
Matrix Spike Dup (EF71312-MSD1)	Sou	rce: 7F12005-	03	Prepared: 0	06/13/07 A	nalyzed: 06	/15/07			
Benzene	0.0478	0.00100	mg/L	0.0500	ND	95.6	80-120	3.29	20	
Toluene	0.0495	0.00100	"	0.0500	ND	99.0	80-120	2.00	20	
Ethylbenzene	0.0523	0.00100	**	0.0500	ND	105	80-120	1.89	20	
Xylene (p/m)	0.0913	0.00100	0	0.100	ND	91.3	80-120	2.49	20	
Xylene (o)	0.0506	0.00100	H.	0.0500	ND	101	80-120	3.88	20	
Surrogate: a,a,a-Trifluorotoluene	49.5		ug-7	50.0		99.0	80-120			
Surrogate: 4-Bromofluorobenzene	47.1		"	50.0		94.2	80-120			

Project: EME A-2 Leak

122 W. Taylor

Hobbs NM, 88240

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EF71403 - General Preparation (V	WetChem)									
Blank (EF71403-BLK1)				Prepared &	Analyzed:	06/14/07				
Total Alkalinity	ND	2.00	mg/L							
LCS (EF71403-BS1)				Prepared &	Analyzed:	06/14/07				
Bicarbonate Alkalinity	170	2.00	mg/L	200		85.0	85-115			
Duplicate (EF71403-DUP1)	Sou	rce: 7F11010-	01	Prepared &	Analyzed:	06/14/07				
Total Alkalinity	320	2.00	mg/L		320			0.00	20	
Reference (EF71403-SRM1)				Prepared &	z Analyzed:	06/14/07				
Total Alkalinity	250		mg/L	250		100	90-110			
Batch EF71504 - General Preparation (	WetChem)		•							
Blank (EF71504-BLK1)				Prepared &	Analyzed:	06/15/07	_			
Chloride	ND	0.500	mg/L							
Sulfate	ND	0.500	11							
LCS (EF71504-BS1)				Prepared &	k Analyzed:	06/15/07				
							80-120			
Chloride	9.83	0.500	mg/L	10.0		98.3	60-120			
	9.83 10.1	0.500 0.500	mg/L	10.0 10.0		98.3 101	80-120			
Chloride Sulfate Calibration Check (EF71504-CCV1)			. •	10.0	ሪ Analyzed:	101				
Sulfate			. •	10.0	ż Analyzed:	101				
Sulfate Calibration Check (EF71504-CCVI)	10.1		"	10.0 Prepared &	ż Analyzed:	101 06/15/07	80-120			
Sulfate  Calibration Check (EF71504-CCV1)  Sulfate	10.1 12.0 9.07		mg/L	10.0 Prepared & 10.0	¿ Analyzed:	101 06/15/07 120 90.7	80-120 80-120			
Sulfate  Calibration Check (EF71504-CCV1)  Sulfate Chloride	10.1 12.0 9.07	0.500	mg/L	10.0 Prepared & 10.0		101 06/15/07 120 90.7	80-120 80-120	0.00	20	

Rice Operating Co. 122 W. Taylor

Hobbs NM, 88240

Project: EME A-2 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 EF71504 - General Preparation	(WetChem)									
Duplicate (EF71504-DUP2)	Sour	ce: 7F11017-	01	Prepared &	: Analyzed:	06/15/07				
Sulfate	76.7	5.00	mg/L		77.6			1.17	20	
Chloride	67.9	5.00	"		69.9			2.90	20	•
Matrix Spike (EF71504-MS1)	Sour	·ce: 7F11014-	01	Prepared &	Analyzed:	06/15/07				
Sulfate	354	12.5	mg/L	250	104	100	80-120			
Chloride	992	12.5	n	250	731	104	80-120			
Matrix Spike (EF71504-MS2)	Sour	ce: 7F11017-	01	Prepared &	Analyzed:	06/15/07				
Chloride	168	5.00	mg/L	100	69.9	98.1	80-120			
Sulfate	174	5.00	"	100	77.6	96.4	80-120			
Batch EF71519 - General Preparation	(WetChem)									
Blank (EF71519-BLK1)				Prenared: (	06/12/07 A	nalyzed: 06	/15/07			
Didna (Pr / 1915-DDIXI)										
	ND	10,0	mg/L							
Total Dissolved Solids		10,0 rce: <b>7F11009</b> -	•		06/12/07 A	nalyzed: 06				
Total Dissolved Solids  Duplicate (EF71519-DUP1)			•		06/12/07 A 23000	nalyzed: 06		6.72	20	
Total Dissolved Solids  Duplicate (EF71519-DUP1)  Total Dissolved Solids	<b>Sour</b> 24600	rce: 7F11009-	01 mg/L	Prepared: (	23000	nalyzed: 06	/15/07	6.72	20	
Total Dissolved Solids  Duplicate (EF71519-DUP1)  Total Dissolved Solids  Duplicate (EF71519-DUP2)  Total Dissolved Solids	<b>Sour</b> 24600	rce: 7F11009-	01 mg/L	Prepared: (	23000		/15/07	6.72	20	
Total Dissolved Solids  Duplicate (EF71519-DUP1)  Total Dissolved Solids  Duplicate (EF71519-DUP2)  Total Dissolved Solids	24600 Sour 1380	rce: 7F11009- 10.0 rce: 7F11014-	01 mg/L 03	Prepared: (	23000 06/12/07 A		/15/07			
Total Dissolved Solids  Duplicate (EF71519-DUP1)  Total Dissolved Solids  Duplicate (EF71519-DUP2)	24600 Sour 1380	rce: 7F11009- 10.0 rce: 7F11014-	01 mg/L 03	Prepared: (	23000 06/12/07 A 1340		/15/07			

Rice Operating Co.

Project: EME A-2 Leak
Fax: (505) 397-1471

122 W. Taylor
Project Number: None Given
Hobbs NM, 88240
Project Manager: Kristin Farris-Pope

### 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 EF71520 - General Preparation	on (WetChem)		_					<del> </del>	·····	
Duplicate (EF71520-DUP1)	Source	e: 7F11016-	03	Prepared: 0	6/13/07 A	nalyzed: 06	5/15/07			
Total Dissolved Solids	21800	10.0	mg/L		. 21000			3.74	20	
Duplicate (EF71520-DUP2)	Source	e: 7F12005-	05	Prepared: (	)6/13/07 A	nalyzed: 06	5/15/07			
Total Dissolved Solids	512	10.0	mg/L		546			6.43	20	

Project: EME A-2 Leak

Fax: (505) 397-1471

122 W. Taylor Hobbs NM, 88240 Project Number: None Given

Project Manager: Kristin Farris-Pope

Total Metals by EPA / Standard Methods - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF71902 - 6010B/No Digestion								,/		
Blank (EF71902-BLK1)				Prepared &	: Analyzed:	06/19/07				
Calcium	ND	0.0810	ıng/L							
Magnesium	ND	0.0360	**							
Potassium	ND	0.0600	"							
Sodium .	ND	0.0430	11							
Calibration Check (EF71902-CCV1)				Prepared &	Analyzed:	06/19/07				
Calcium	2.04		mg/L	2.00		102	85-115			
Magnesium	2.00		11	2.00		100	85-115			
Potassium	2.13		"	2.00		106	85-115			
Sodium	2.04		"	2.00		102	85-115			
Duplicate (EF71902-DUP1)	Sou	rce: 7F11010-	01	Prepared &	k Analyzed:	06/19/07				
Calcium	956	40.5	mg/L		940		•	1.69	20	
Magnesium	337	3.60	н		346			2.64	20	
Potassium	29.9	0.600	н		30.9			3.29	20	
Sodium	2970	21.5	н		2940			1.02	20	

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

Dup

Project: EME A-2 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 dry Sample results reported on a dry weight basis Relative Percent Difference RPD Laboratory Control Spike LCS Matrix Spike MS Duplicate

Report Approved By:

6/27/2007

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

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

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

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

# **Environmental Lab of Texas**

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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## Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

O: $a$	,			
Dient: Rice				
Date/ Time: 6:11:07 4:30				
3510#: 7F11016				
nitials.				
Sample Receipt	Checklist	2	Client (	nitiale
* Temperature of container/ cooler?	(es)	No	5.0 °C	
2 Shipping container in good condition?	YES	No		
3 Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
to Chain of Custody present?	(es)	No	THE TREETA	
	(es)	No		
#8 Sample instructions complete of Chain of Custody? #7 Chain of Custody signed when relinquished/ received?	Yes	No	<del>                                     </del>	
	Yes	No	ID written on Cont./ Lid	
	Yes	No	·	
	1	No	Not Applicable	
	X# <b>#5</b> \$	No		<b>-</b> }
#11 Containers supplied by ELOT? #12 Samples in proper container/ bottle?	YES	No	See Below	
	Nes	No	<del> </del>	
#13 Samples properly preserved?	YES	No	See Below	{
¥14 Sample bottles intact?	700			
Preservations documented on Chain of Custody?		No	<del></del>	
#16 Containers documented on Chain of Custody?	Yes	No		
#17 Sufficient sample amount for indicated test(s)?	Xes	No	See Below	
#18 All samples received within sufficient hold time?	Yes	No	See Below	
subcontract of sample(s)?	Yes	No	Net-Applicable	
VOC samples have zero headspace?	Yes	No	Not Applicable	
Variance Docu	ımentation		Date/ Time:	
70((Rot)		•		
Regarding:		<del></del>		
		<u>.</u>		
Corrective Action Taken:				
				<del></del>
Check all that Apply:  See attached e-mail/ fax  Client understands and wo				
Cooling process had begun	n shortly after	samplin	g event	



PHONE (505) 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: (505) 397-1471

Receiving Date: 08/22/07

Reporting Date: 08/27/07

Project Number: NOT GIVEN

Project Name: EME A-2 LEAK

**NEW MEXICO** 

Project Location: T20S-R36E-SEC2 A ~ LEA COUNTY -

Sampling Date: 08/21/07 Sample Type: WATER

Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: AB

				ETHYL	TOTAL
•		BENZENE	TOLUENE	BENZENE	XYLENES
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)

ANALYSIS D	ATE	08/23/07	08/23/07	08/23/07	08/23/07
H13153-1	MONITOR WELL #1	<0.004	<0.004	<0.004	<0.012
H13153-2	MONITOR WELL #2	<0.004	<0.004	<0.004	<0.012
H13153-3	MONITOR WELL #3	<0.004	<0.004	<0.004	<0.012
				An again 1900 Ann 1900 An 1900 Ann 1900 An 1900 An 1900 An 1900 An 1900 An 1900 An 1900 An 1900 An 1900 An 190	PERSON (M. 1440) SOUTH IN, SOUTH AT BOOK TOP BOOK TO THE REPORT OF THE
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Quality Conti	TO	0.096	0.085	0.086	0.264
True Value C	C	0.100	0.100	0.100	0.300
% Recovery		96	85	86	88
Relative Per	cent Difference	0.9	1.8	0.8	2.8

METHOD: EPA SW-846 8021B

Chemist

Date



PHONE (505) 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: (505) 397-1471

Receiving Date: 08/22/07 Reporting Date: 08/28/07

Project Owner: NOT GIVEN
Project Name: EME A-2 LEAK

Project Location: T20S-R36E-SEC2 A~LEA COUNTY, NM

Sampling Date: 08/21/07 Sample Type: WATER

Sample Condition: COOL & INTACT

Sample Received By: BC Analyzed By: HM/KS

	·						
	•	Na	Ca	Mg	K	Conductivity	T-Alkalinity
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(uS/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS DAT	ΓE:	08/23/07	08/23/07	08/23/07	08/23/07	08/23/07	08/23/07
H13153-1	MONITOR WELL #1	789	845	290	7.2	9,950	208
H13153-2	MONITOR WELL #2	683	652	238	6.1	8,010	232
H13153-3	MONITOR WELL #3	1764	1913	605	13.5	20,700	184
Quality Control	And the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t	NR	51.9	49.2	1.94	1414	NR
True Value QC		NR	50.0	50.0	2.00	1413	NR
% Recovery		NR	104	98.4	97.0	100	NR
Relative Percer	nt Difference	NR	8.0	6.3	2.1	0.6	· NR
METHODS:		SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1
		CI <sup>-</sup>	SO <sub>4</sub>	CO <sub>3</sub>	HCO <sub>3</sub>	рН	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DAT	ΓE:	08/23/07	08/23/07	08/23/07	08/23/07	08/23/07	08/23/07
H13153-1	MONITOR WELL #1	3239	249	0	254	6.72	9,045
H13153-2	MONITOR WELL #2	2549	268	0	283	6.86	7,819
H13153-3	MONITOR WELL #3	7448	. 432	0	224	6.62	17,755
Quality Control	august gad Probabilitis de Udestyn i bad ville de lithiste all dan Arbertan, aleje , in travers all 5 hebberlieb	520	25.4	NR	939	6.95	NR
True Value QC	and an experience of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon	500	25.0	NR	1000	7.00	NR
% Recovery	no and antipological research as a construction of the second second second second second second second second	104	101	NR	93.9	99.3	NR
Relative Percer	nt Difference	3.9	1.1	NR	1.4	< 0.1	NR
METHODS:		SM4500-CI-B	375.4	310.1	310.1	150.1	160.1
	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s					L	

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ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: KRISTIN FARRIS-POPE 122 W. TAYLOR STREET HOBBS, NM 88240

FAX TO: (575) 397-1471

Receiving Date: 12/05/07

Reporting Date: 12/06/07
Project Number: NOT GIVEN

Project Name: EME A-2 LEAK

Project Location: T20S-R36E-SEC2 A ~ LEA COUNTY, NM

Sampling Date: 12/04/07

Sample Type: WATER

Sample Condition: COOL & INTACT.

Sample Received By: AB

Analyzed By: AB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DAT	ΓE	12/06/07	12/06/07	12/06/07	12/06/07
H13851-1	MONITOR WELL #1	<0.001	<0.001	<0.001	<0.003
H13851-2	MONITOR WELL #2	<0.001	<0.001	<0.001	<0.003
H13851-3	MONITOR WELL #3	<0.001	<0.001	<0.001	<0.003
Quality Control		0.103	0.099	0.099	0.312
True Value QC		0.100	0.100	0.100	0.300
% Recovery		103	99	99	104
Relative Percer	nt Difference	1.7	1.6	1.5	1.4

METHOD: EPA SW-846 8021B

Date



ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: KRISTIN FARRIS-POPE 122 W. TAYLOR STREET HOBBS, NM 88240

FAX TO: (575) 397-1471

Receiving Date: 12/05/07

Reporting Date: 12/11//07 Project Number: NOT GIVEN

Project Name: EME A-2 LEAK

Project Location: T20S-R36E-SEC2 A~LEA COUNTY, NM

Sampling Date: 12/04/07 Sample Type: WATER

Sample Condition: COOL & INTACT

Sample Received By: AB Analyzed By: HM/KS

		Na	Ca	Mg	K	Conductivity	T-Alkalinity
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(uS/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS DAT	E:	12/10/07	12/10/07	12/10/07	12/10/07	12/07/07	12/07/07
H13851-1	MONITOR WELL #1	867	659	294	10.9	9,290	216
H13851-2	MONITOR WELL #2	779	559	234	9.30	7,880	240
H13851-3	MONITOR WELL #3	1,928	1,730	676	16.7	20,890	188
Quality Control		NR	49.2	50.8	2.88	1,404	NR
True Value QC	د. ۱۰ ه. الله الله الله الله الله الله الله ا	NR	50.0	50.0	3.00	1,413	NR
% Recovery		NR	98.5	102	96.0	99.4	NR
Relative Percer	t Difference	NR	< 0.1	1.6	12.4	1.3	NR
METHODS:		SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1
		Cl	SO <sub>4</sub>	CO <sub>3</sub>	HCO3	Hq	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DAT	E:	12/07/07	12/07/07	12/07/07	12/07/07	12/07/07	12/06/07
H13851-1	MONITOR WELL #1	3,050	235	0	264	6.86	6,033
H13851-2	MONITOR WELL #2	2,500	292	0	293	6.94	5,111
H13851-3	MONITOR WELL #3	7,600	411	0	229	6.74	14,088
Quality Control		500	23.4	NR	1000	7.04	NR
True Value QC		500	25.0	NR	1000	7.00	NR
% Recovery		100	93.5	NR	100	101	NR
Relative Percen	t Difference	< 0.1	18.0	NR	1.2	0.1	NR
METHODS:		SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

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PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In 13851 shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

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Mexico 88240 Tel (505) 393-2326	Cardinal Labor	al L	apo	rat	Ori	atories, Inc.	nc.			Ì		LAB Order ID #	Jer ID	#							
Fax (505) 35	93-2476		ı																	l	
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Project Manager.	Project Manager.		Address:	SS:		(Street, City, Zip)	ty, Zip)		سنسيوه	:		<u>.</u>	(Circle or Specify Method No.)	Specif	/ Meth	o N N				-	,
Kristin Farr	Kristin Farris-Pope, Project Scientist	122 W	122 W Taylor Street ~ Hobbs, New Mexico 88240	et ~ Hobb	s, New Me	xico 88240															
Address: (St	(Street, City, Zip)	-	Phone#	#		-	Fax#:														
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