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Annual GW Mon. REPORTS

DATE: 2007



Highlander Environmental Corp.

Midland, Texas

CERTIFIED MAIL RETURN RECEIPT NO. 7002 3150 0005 0508 7706

March 19, 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) jct. A-2-1 Release, Unit A, Section 2, T-20-S, R-36-E, Lea County, New Mexico, NMOCD CASE #1R0427-177

Dear Mr. Price:

Highlander Environmental Corp. (Highlander) submits the following 2007 Annual Groundwater Summary Report for the Rice Operating Company (ROC), jct. A-2-1 Release, located in the Eunice Monument Eumont (EME) Salt Water Disposal System.

Background

As part of the ROC Junction Box Upgrade Workplan, starting on February 26, 2004, the junction box was moved 85 feet to the west. The former junction box site was investigated vertically and horizontally with a backhoe. Test trenches were placed 10 feet in each direction from the source and showed a decline in chloride concentrations with depth to less than 250 mg/kg at 14 feet below ground surface (bgs). The Site was excavated with dimensions of approximately 20 feet x 20 feet x 12 feet. TPH impact was noted to a depth of at least 12 feet bgs. The bottom hole chloride concentration was 659 mg/kg at 12 feet, and a 4-wall composite sample had a concentration of 915 mg/kg. Regional groundwater information indicates that depth to groundwater is approximately 50 feet bgs.

The excavated soil was blended onsite and replaced into the excavation to a depth of 7 feet bgs. At 7 feet bgs, a compacted clay barrier was installed to inhibit further hydrocarbon and chloride migration. The remaining soils were backfilled on top of the clay barrier and contoured to the surrounding surface. On June 2, 2004, a hollow-stem auger unit was utilized to conduct one soil boring at the former junction box site. The soil boring was

1910 N. Big Spring

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advanced to a total depth of 30 feet bgs. A bottom hole sample (shown as 35 feet bgs) was collected from the borehole and exhibited a TPH concentration of 242.5 mg/kg and a chloride concentration of 688 mg/kg. The site was disclosed to the NMOCD as a potential groundwater impact site on June 29, 2005. Additionally, ROC submitted a Junction Box Disclosure Report to the NMOCD dated July 1, 2005.

On September 29, 2006, ROC submitted the Investigation and Characterization Plan (ICP) to Wayne Price of the NMOCD-Santa Fe office for review. Mr. Price granted approval of the ICP in a letter dated October 4, 2006.

Between October 11 and October 13, 2006, Highlander personnel were onsite to oversee the installation of three monitor wells (MW-1 through MW-3) along with five soil borings (SB-2 through SB-6) within, up, and down gradient of the release area. The surface area affected measured approximately 45 feet by 75 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, along with select samples for BTEX and TPH utilizing EPA analysis method 8021B and 8015M, respectively. Analytical results indicated, that with the exception of SB-2, residual chloride impact to subsurface soils was less than 1,000 mg/kg except near the saturated zone where chloride concentrations increase to near or slightly greater than 1,000 mg/kg.

The initial groundwater sampling (November 6, 2006) for the three monitor wells showed elevated chloride levels ranging from 7,970 mg/L in MW-3 (downgradient) to 8,680 mg/L in MW-2 (upgradient). In addition, TDS ranged from 20,400 mg/L in MW-3 to 23,600 mg/L in MW-2. BTEX concentrations were elevated in monitor well MW-1, but remained below the New Mexico Water Quality Control Commission standards. No BTEX was reported in monitor well MW-2 and MW-3.

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. The original clay liner measured 20 feet by 20 feet and extended to a depth of 7 feet bgs. It also requires an extension of 5 feet in each direction to provide a complete infiltration barrier. Mr. Price approved the CAP in a meeting with ROC and Highlander on July 18, 2007.

Between October 16 and October 31, 2007, ROC oversaw the excavation and removal of the overburden around the affected area. An area measuring 25 feet by 25 feet by 7 feet deep was excavated with approximately 84 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 336 mg/kg and a TPH DRO of 56.9 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 around the former clay liner. The density of the compacted clay measured 90.2%. 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 9,015 square feet) was reseeded with a blend of native vegetation and is monitored for growth.

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 well was also inspected for the presence of phase-separated hydrocarbons (PSH). PSH has been found in the past in monitor well MW-1. Since January 2007, no PSH has been measured in MW-1, however an absorbent sock has been utilized in the monitor well to recover residual PSH from the groundwater.

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 7,798 mg/L in downgradient MW-3 in August 2007 to 10,100 mg/L in up and cross gradient well MW-1 and MW-2 in February 2007. The chloride concentrations for the three wells were relatively stable and consistent throughout the year. 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.



In 2007, BTEX constituents were detected at or above reporting limits for monitor well MW-1. In addition, benzene levels were above the New Mexico Water Quality Control Commission (WQCC) standards in MW-1. No BTEX constituents were detected in MW-2 or MW-3 throughout 2007. Cumulative analytical data is summarized in the Table Section of this report.

Conclusions

- 1. In 2007, BTEX constituents along with benzene were detected at or above the New Mexico Water Quality Control Commission (WQCC) standards in monitor well MW-1.
- 2. Chloride concentrations for the three monitor wells were elevated through the year and have ranged from a low of 7,798 mg/L in downgradient MW-3 to a high of 10,100 mg/L in up to crossgradient MW-1 an MW-2. In comparing the chloride concentration analysis data with other water quality in the area, specifically the ROC EME D-1 9 (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.

Respectfully Submitted, HIGHLANDER ENVIRONMENTAL CORP.

Jeffley Kindley, P.G. Senior Environmental Geologist

cc: ROC, Edward Hansen – NMOCD Enclosures: Figures, Tables, Laboratory Analysis



FIGURES

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TABLES

	-	-	1	4	-		MW			
	38.47	38.71	38.50	38.30	38.13	Water	Depth to			
	53.76	53.76	53.76	53.76	53.76	Depth	Total			
30.02	2.40	2.40	2.40	2.50	2.50	Volume	Well			
5	00	8	00	8	10	Purged	Volume			
	12/04/07	08/21/07	06/08/07	02/13/07	11/06/06	Date	Sample			
	8,800	8,197	8,500	10,100	8,460		Ω	Lea		Rice E
	23,481	23,775	23,900	17,900	22,800		TDS	ounty, N	EME Jct.	ngineerir
	0.0880	0.0340	0.0220	0.0692	0.00331		Benzene	lew Mexico	A-2-1	ng Operatir
	<0.001	0.004	0.00147	0.00526	0.00158		Toluene			BL
	0.021	0.012	0.00799	0.0313	0.00337		Ethyl Benzene			
	0.010	0.022	0.00768	0.0404	0.003418		Total Xylenes			
	5,870	6,611	6,760	8,190	6,780		Sulfate			
	hydrocar. odr		Comments							



 _	-	-	-	-	-	-	-	-	-
2	2	2	2	2		MW			
36.79	37.04	36.83	36.62	36.45	Water	Depth to			
48.65	48.65	48.65	48.65	48.65	Depth	Total			
1.90	1.90	1.90	1.90	2.00	Volume	Well			
00	00	00	00	00	Purged	Volume			
12/04/07	08/21/07	06/08/07	02/13/07	11/06/06	Date	Sample			
8,800	8,797	9,300	10,100	8,680		Ω	Lea		Rice E
25,329	26,155	25,000	20,300	23,600		TDS	County, N	EME Jct.	ngineerin
<0.001	<0.004	<0.001	<0.001	<0.001		Benzene	ew Mexicc	A-2-1	g Operatir
<0.001	<0.004	<0.001	<0.001	<0.001		Toluene	0		Bu
<0.001	<0.004	<0.001	<0.001	<0.001		Ethyl Benzene			
<0.003	<0.004	<0.001	<0.001	<0.001		Total Xylenes			
6,570	7,005	7,280	7,990	6,960		Sulfate			
Clear no odor		Comments							



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ω	ω	ω	S	ω		MW			
37.39	37.64	37.50	37.29	37.12	Water	Depth to			
47.38	47.38	47.38	47.38	47.38	Depth	Total			
1.60	1.60	1.60	1.60	1.60	Volume	Well			
6	6	6	6	6	Purged	Volume			
12/04/07	08/21/07	06/08/07	02/13/07	11/06/06	Date	Sample			
8,600	7,798	8,300	9,820	7,970		0	Lea (Rice E
24,814	21,200	21,400	23,600	20,400		TDS	County, N	EME Jct.	ngineerin
<0.001	<0.004	<0.001	<0.001	<0.001		Benzene	ew Mexico	A-2-1	ig Operatir
<0.001	<0.004	<0.001	<0.001	<0.001		Toluene			DI
<0.001	<0.004	<0.001	<0.001	< 0.001		Ethyl Benzene			
<0.003	< 0.012	<0.001	<0.001	<0.001		Total Xylenes			
6,480	7,381	5,350	6,050	5,950		Sulfate			
Clear no odor		Comments							



APPENDIX A

.



A Xenco Laboratories Company

Analytical Report

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

Project: EME Jct. A-2-1 Project Number: None Given Location: T20S R36E Sec 2 A ~ Lea County New Mexico

Lab Order Number: 7B16009

Report Date: 02/28/07

Rice Operating Co.	Project: EME Jct. A-2-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well #1	7B16009-01	Water	02/13/07 14:30	02-16-2007 11:19
Monitor Well #2	7B16009-02	Water	02/13/07 13:25	02-16-2007 11:19
Monitor Well #3	7B16009-03	Water	02/13/07 12:40	02-16-2007 11:19

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Rice Operating Co. 122 W. Taylor Hobbs NM, 88240		Project Nu Project Ma	roject: EM imber: Noi nager: Kri	E Jct. A-2- ne Given stin Farris-I			Fax: (505)	397-1471	
		Or	ganics b	y GC				······	
······································		Environn	iental L	ab of Te	exas		<u>.</u>		
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7B16009-01) Water									
Benzene	0.0692	0.00100	mg/L	1	EB72104	02/21/07	02/22/07	EPA 8021B	
Toluene	0.00526	0.00100	n		H	*	н	18	
Ethylbenzene	0.0313	0.00100	N	"	P	ч		17	
Xylene (p/m)	0.0404	0.00100	"	"	P	н	*	n	
Xylene (0)	0.00324	0.00100	"	"			11	11	
Surrogate: a,a,a-Trifluorotoluene		123 %	80-1	120	"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		145 %	80-1	120	. "	n	"	<i>n</i> .	S-04
Monitor Well #2 (7B16009-02) Water									
Benzene	ND	0.00100	mg/L	1	EB72104	02/21/07	02/22/07	EPA 8021B	
Toluene	ND	0.00100	"		. H	"	11		
Ethylbenzene	ND	0.00100	"		"	"	"	н	
Xylene (p/m)	ND	0.00100		"	n			. 11	
Xylene (o)	ND	0.00100	W	19	н	"	"	μ	
Surrogate: a,a,a-Trifluorotoluene		104 %	80-,	120	"	"	<i>n</i>	11	
Surrogate: 4-Bromofluorobenzene		111 %	80	120	"	"	"	"	
Monitor Well #3 (7B16009-03) Water									
Benzene	ND	0.00100	mg/L	1	EB72104	02/21/07	02/22/07	EPA 8021B	
Toluene	ND	0.00100	"				14	*	
Ethylbenzene	ND	0.00100		н		"		n	
Xylene (p/m)	ND	0.00100		н	"	u	n	11	
Xylene (o)	ND	0.00100	"			u	н	*1	
Surrogate: a,a,a-Trifluorotoluene		104 %	80-	120	19	"	8	55	
Surrogate: 4-Bromofluorobenzene		113 %	80	120	n	"	"	"	

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

Project: EME Jct. A-2-1 Project Number: None Given Project Manager: Kristin Farris-Pope

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Regult	Reporting	Unite		D - 1		·		
			Onits		Batch	Prepared	Analyzed	Method	Notes
Montor well #1 (/B16009-01) Water				·					
Total Alkalinity	960	2.00	mg/L	t	EB71701	02/17/07	02/17/07	EPA 310.1M	
Chloride	10100	250	".	500	EB72203	02/22/07	02/22/07	EPA 300.0	
Total Dissolved Solids	17900	10.0	"	1	EB72001	02/16/07	02/17/07	EPA 160.1	
Sulfate	8190	250	n	500	EB72203	02/22/07	02/22/07	EPA 300.0	
Monitor Well #2 (7B16009-02) Water	_								
Total Alkalinity	730	2.00	mg/L	1	EB71701	02/17/07	02/17/07	EPA 310.1M	
Chloride	10100	250	"	500	EB72203	02/22/07	02/22/07	EPA 300.0	
Total Dissolved Solids	20300	10.0	н	1	EB72001	02/16/07	02/17/07	EPA 160.1	
Sulfate	7990	250	н	500	EB72203	02/22/07	02/22/07	EPA 300.0	
Monitor Well #3 (7B16009-03) Water									
Total Alkalinity	670	2.00	mg/L	l	EB71701	02/17/07	02/17/07	EPA 310.1M	
Chloride	9820	250	н	500	EB72203	02/22/07	02/22/07	EPA 300.0	
Total Dissolved Solids	23600	10.0	"	1	EB72001	02/16/07	02/17/07	EPA 160.1	
Sulfate	6050	250	н	500	EB72203	02/22/07	02/22/07	EPA 300.0	

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	Rice Operating Co.	*	Project:	EME Jct. A-2-1	Fax: (505) 397-1471
	122 W. Taylor		Project Number:	None Given	
1	Hobbs NM, 88240		Project Manager:	Kristin Farris-Pope	

Total Metals by EPA / Standard Methods

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					· · · · ·				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7B16009-01) Water									
Calcium	542	20.2	mg/L	250	EB72209	02/22/07	02/22/07	EPA 6010B	
Magnesium	220	1.80	n	50			H	n	
Potassium	30.2	3.00	"	"	"	n	н	- n	
Sodium	9340	86.0	"	2000	u			"	
Monitor Well #2 (7B16009-02) Water									
Calcium	665	20.2	mg/L	250	EB72209	02/22/07	02/22/07	EPA 6010B	
Magnesium	306	1.80	"	50		u '	11	"	
Potassium	29.7	3.00	"	"	**			п	
Sodium	8960	86.0	11	2000	"	*	"	H	
Monitor Well #3 (7B16009-03) Water									
Calcium	448	20.2	mg/L	250	EB72209	02/22/07	02/22/07	EPA 6010B	
Magnesium	198	1.80	11	50	"	n	"		
Potassium	32.5	3.00	n	н	"	n	"	n	
Sodium	8590	86.0	•	2000	"				

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Project: EME Jct. A-2-1 Project Number: None Given Project Manager: Kristin Farris-Pone	Fax: (505) 397-1471
	Project Number: None Given Project Manager: Kristin Farris-Pope

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		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	02/21/07 A	nalyzed: 02	2/22/07			
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100								
Ethylbenzene	ND	0.00100	*							
Xylene (p/m)	ND	0.00100	**							
Xylene (0)	ND	0.00100	n							
Surrogate: a,a,a-Trifluorotoluene	54.0		ug/l	50.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	59.2		"	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	n	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 (0) .	0.0500	0.00100	н	0.0500		100	80-120			
Surrogate: a,a,a-Trifluorotoluene	\$5.5		ug 1	50.0		111	80-120			
Surrogate: 4-Bromofluorobenzene	58.8		n	50.0		118	80-120			
Calibration Check (EB72104-CCV1)				Prepared: (02/21/07 A	nalyzed: 02	2/23/07			
Benzene	50.0		ug/l	50.0		100	80-120			
Toluene	46.9			50.0		93.8	80-120			
Ethylbenzene	48.8		"	50.0		97.6	80-120			
Xylene (p/m)	95.2			100		95.2	80-120			
Xylene (0)	42.7		п	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	urce: 7B16006	-01	Prepared: (02/21/07 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	н	0.0500	ND	94.0	80-120			
Xylene (p/m)	0.0930	0.00100		0.100	ND	93.0	80-120			
Xylene (0)	0.0408	0.00100	H	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			

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

Project: EME Jct. A-2-1 Project Number: None Given Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Organics by GC - Quality Control

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

Batch EB72104 - EPA 5030C (GC)

Matrix Spike Dup (EB72104-MSD1)	Source: 7B16006-01			Prepared: 02	2/21/07 A	nalyzed: 02				
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	5 3 .3		"	50.0		107	80-120			

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Analyte	Result	Reporting Limit	Units	· Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB71701 - General Preparation (Wet	Chem)									
Blank (EB71701-BLK1)				Prepared &	Analyzed:	02/17/07				
Total Alkalinity	ND	2.00	mg/L						<u> </u>	
LCS (EB71701-BS1)				Prepared &	Analyzed:	02/17/07				
Total Alkalinity	192	2.00	ıng/L		- ****		85-115			
Bicarbonate Alkalinity	230	2.00	"	200		115	85-115			
Duplicate (EB71701-DUP1)	Sou	Irce: 7B16006-	01	Prepared &	Analyzed	02/17/07				
Total Alkalinity	280	2.00	mg/L		290			3.51	20	
Reference (EB71701-SRM1)				Prepared &	2 Analyzed	: 02/17/07				
Total Alkalinity	264		ıng/L	250		106	90-110			
Batch EB72001 - Filtration Preparation				<u>un.</u>						
Blank (EB72001-BLK1)			_	Prepared: ()2/16/07 A	nalyzed: 02	/17/07			
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (EB72001-DUP1)	Sou	ırce: 7B16006-	01RE1	Prepared: (02/16/07 A	nalyzed: 02	/17/07			
Total Dissolved Solids	6260	10.0	ing/L		5970			4.74	20	
Duplicate (EB72001-DUP2)	Sou	irce: 7B16009-	03RE1	Prepared: ()2/16/07 A	nalyzed: 02	/17/07			
Total Dissolved Solids	16900	10.0	mg/L		16900			0.00	20	
Batch EB72203 - General Preparation (Wet	Chem)									<u> </u>

Blank (EB72203-BLK1)			Prepared & Analyzed: 02/22/07
Sulfate	ND	0.500	mg/L
Chloride	ND	0.500	,

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General Chemistry Parameters by EPA / Standard Methods - Quality Control

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Γ					·					
Anglute	Result	Reporting Limit	Unite	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Notes
Analyte		Linin	Ciuis	Lever		70ICLC	Links	КD	Cinik	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 &	& Analyzed:	02/22/07				
Sulfate	10.3		mg/L	10.0		103	80-120			
Chloride	10.3		ч	10.0		103	80-120			
Duplicate (EB72203-DUP1)	Sour	ce: 7B16008-	-02	Prepared &	& Analyzed	02/22/07				
Sulfate	237	50.0	mg/L		226			4.75	20	
Chloride	3040	50.0	n		3060			0.656	20	
Duplicate (EB72203-DUP2)	Sour	ce: 7B16010-	-01	Prepared &	& Analyzed	02/22/07				
Chloride	573	12.5	mg/L		587	-		2.41	20	
Sulfate	246	12.5	N		249			1.21	20	
Matrix Spike (EB72203-MS1)	Sou	rce: 7B16008	-02	Prepared &	& Analyzed	: 02/22/07				
Sulfate	1270	50.0	mg/L	1000	226	104	80-120			
Chloride	4180	50.0	"	1000	3060	112	80-120			
Matrix Spike (EB72203-MS2)	Sou	rce: 7B16010	-01	Prepared &	Prepared & Analyzed: 02/22/07					
Chloride	872	12.5	mg/L	250	587	114	80-120			
Sulfate	527	12.5	н	250	249	111	80-120			

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Project: EME Jct. A-2-1 Project Number: None Given Project Manager: Kristin Farris-Pope

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 EB72209 - 6010B/No Digestion										

Blank (EB72209-BLK1)				Prepared &	Analyzed:	02/22/07				
Calcium	ND	0.0810	mg/L							
Magnesium	ND	0.0360	11							
Potassium	ND	0.0600	*1							
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			2.00		87.5	85-115			
Sodium	1.79		11	2.00	×	89.5	85-115			
Duplicate (EB72209-DUP1)	Sour	ce: 7B16006-	01	Prepared &	Analyzed:	02/22/07				
Calcium	346	20.2	mg/L		360			3.97	20	
Magnesium	182	1.80	"		183			0.548	20	
Potassium	50.4	0,600	"		38.2			27.5	20	R2
Sodium	1800	21.5	"		1980			9.52	20	

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Rice Ope 122 W. T Hobbs N	ProjectEME Jct. A-2-1Fax: (505) 397-1471YaylorProject Number:None GivenM, 88240Project Manager:Kristin Farris-Pope
	Notes and Definitions
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
R2	The RPD exceeded the acceptance limit.
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

Panter

Report Approved By:

2/28/2007

Date:

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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lab lab	Kristin Farris	RICE Operat	: 122 W. Taylo	Hobbs, New	(505) 393-91	: Rozanne Johnson			०७१	LD CODE											ŭi to∶kpope@ri	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
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Environmental Lab of Texas Variance/ Corrective Action Report- Sample Log-In

Client:	Rice	· · · ·
Date/ Time:	2/10/07	0940
Lab ID # :	7316009	

Initials:

Sample Receipt Checklist

				lient initials
#1 Temperature of container/ cooler?	des	No	~1.5 °C	449 S.S.S.S.
#2 Shipping container in good condition?	Yes>	No		NAMES !
#3 Custody Seals intact on shipping container/ cooler?	Yes>	No	Not Present	States.
#4 Custody Seals Intact on sample bottles/ container?	des	ANO K	Not Present	2442303
#5 Chain of Custody present?	XES)	No		A CARLANDA
#6 Sample Instructions complete of Chain of Custody?	∖ \Yes>	No		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
#7 Chain of Custody signed when relinquished/ received?	Xes	No	i se se se suggi	
#8 Chain of Custody agrees with sample label(s)?	(es)	No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	(Kes)	No	Not Applicable	1.X. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
#10 Sample matrix properties agree with Chain of Custody?	Yes>	No		
#11 Containers supplied by ELOT?	Yes	No		1000000
#12 Samples in proper container/ bottle?	Yes	No	See Below	1000000
#13 Samples properly preserved?	(res)	No	See Below	-3:3:232
#14 Sample bottles intact?	Yes	No		WARAAA P
#15 Preservations documented on Chain of Custody?	Yes)	No		10003383
#16 Containers documented on Chain of Custody?	Yes	No		1 2 2 2 2 2 2 2 2
#17 Sufficient sample amount for indicated test(s)?	(res)	No	See Below	0.05306938
#18 All samples received within sufficient hold time?	(les	No	See Below	144564155555
#19 Subcontract of sample(s)?	Yes D	No	Not Applicable	+
#20 VOC samples have zero headspace?	(Yes)	No	Not Applicable	1 2018/05/55

Variance Documentation

Contact:	Contacted by:	Date/ Time:
Regarding:		and a start of the s Start of the start of
		 Source and the second seco
Corrective Act	ion 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



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Analytical Report

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

Project: EME Jct. A-2-1 Project Number: None Given Location: T20S R36E Sec2 A ~ Lea County New Mexico

Lab Order Number: 7F11015

Report Date: 06/27/07

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

Project: EME Jct. A-2-1 Project Number: None Given Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory 1D	Matrix	Date Sampled	Date Received
Monitor Well #1	7F11015-01	Water	06/08/07 14:45	06-11-2007 16:30
Monitor Well #2	7F11015-02	Water	06/08/07 13:00	06-11-2007 16:30
Monitor Well #3	7F11015-03	Water	06/08/07 13:50	06-11-2007 16:30

Rice Operating Co. 122 W. Taylor Hobbs NM, 88240		Pr Project Nu Project Ma	AE Jct. A-2- one Given istin Farris-1	1 Pope			Fax: (505)	397-1471	
		Or; Environn	ganics h iental L	oy GC Jab of Te	exas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7F11015-01) Water					· · <u> </u>				
Benzene	0.0220	0.00100	mg/L	, 1	EF71312	06/13/07	06/15/07	EPA 8021B	
Toluene	0.00147	0.00100	н	н	н	и	н	n	
Ethylbenzene	0.00799	0.00100		"	и		н	n	
Xylene (p/m)	0.00768	0.00100			"	*	n	"	
Xylene (0)	J [0.000577]	0.00100	"	*	u	"	· "	۳.	
Surrogate: a,a,a-Trifluorotoluene		107 %	80-	120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %	80-	120	"	"	"	"	
Monitor Well #2 (7F11015-02) Water									
Benzene	ND	0.00100	mg/L	1	EF71312	06/13/07	06/15/07	EPA 8021B	
Toluene	ND	0.00100	"	19	"	"		17	
Ethylbenzene	ND	0.00100	n	"	"		"		
Xylene (p/m)	ND	0.00100	н	U	91		17		
Xylene (o)	ND	0.00100	H	п	u	"	*		
Surrogate: a,a,a-Trifluorotoluene		104 %	80-	120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %	80-	-120	"	11	"	"	
Monitor Well #3 (7F11015-03) Water									
Benzene	ND	0.00100	mg/L	1	EF71312	06/13/07	06/15/07	EPA 8021B	<u> </u>
Toluene	ND	0.00100	IF.		11	н	"	0	
Ethylbenzene	ND	0.00100	н	n	"		н	11	
Xylene (p/m)	ND	0.00100	u	n	n '	n	v	n	
Xylene (0)	ND	0.00100	"		н	n		u 	
Surrogate: a,a,a-Trifluorotoluene		98.4 %	80-	-120	"	"		"	

90.2 %

80-120

Surrogate: 4-Bromofluorobenzene

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

Project: EME Jct. A-2-1 Project Number: None Given Project Manager: Kristin Farris-Pope

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7F11015-01) Water									
Total Alkalinity	760	2.00	mg/L	1	EF71403	06/14/07	06/14/07	EPA 310.1M	
Chloride	8500	250	"	500	EF71504	06/15/07	06/15/07	EPA 300.0	
Total Dissolved Solids	23900	10.0	н	1	EF71519	06/12/07	06/15/07	EPA 160.1	
Sulfate	6760	250	u	500	EF71504	06/15/07	06/15/07	EPA 300.0	
Monitor Well #2 (7F11015-02) Water									
Total Alkalinity	710	2.00	mg/L	1	EF71403	06/14/07	06/14/07	EPA 310.1M	
Chloride	9300	250	"	500	EF71504	06/15/07	06/15/07	EPA 300.0	
Total Dissolved Solids	25000	10.0	н	1	EF71519	06/12/07	06/15/07	EPA 160.1	
Sulfate	7280	250		500	EF71504	06/15/07	06/15/07	EPA 300.0	
Monitor Well #3 (7F11015-03) Water									
Total Alkalinity	770	2.00	mg/L	1	EF71403	06/14/07	06/14/07	EPA 310.1M	
Chloride	8300	250		500	EF71504	06/15/07	06/15/07	EPA 300.0	
Total Dissolved Solids	21400	10.0		I	EF71519	06/12/07	06/15/07	EPA 160.1	
Sulfate	5350	250	n	500	EF71504	06/15/07	06/15/07	EPA 300.0	

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

Sodium

Project: EME Jct. A-2-1 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 (7F11015-01) Water									
Calcium	426	40.5	mg/L	500	EF71902	06/19/07	06/19/07	EPA 6010B	
Magnesium	176	3.60		100	n	м	**	n	
Potassium	26.8	0.600	11	10	м	14	"	11	
Sodium	9110	86.0	н	2000	"	17	"	IF.	
Monitor Well #2 (7F11015-02) Water						_			
Calcium	524	8.10	mg/L	100	EF71902	06/19/07	06/19/07	EPA 6010B	
Magnesium	238	3.60	"			**		n	
Potassium	26.5	0.600	н	10	'n	н	'n	*	
Sodium	10300	86.0	"	2000		n	Ħ	и	
Monitor Well #3 (7F11015-03) Water									
Calcium	333	8.10	mg/L	100	EF71902	06/19/07	06/19/07	EPA 6010B	
Magnesium	146	3.60	"	"		"	н	n	
Potassium	27.1	0.600		10	*1	"	н	**	

8010

86.0

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Rice Operating Co. 122 W. Taylor Hobbs NM, 88240		Project Nur Project Mar Project Mar	oject: EN nber: No nager: Kr	1E Jct. A-2-1 one Given istin Farris-Po	ope				Fax: (505)) 397-1471
	Oı	rganics by	GC - Ç	Quality Co	ontrol					
		Environm	ental I	lab of Tex	kas				•	
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF71312 - EPA 5030C (GC)										
Blank (EF71312-BLK1)				Prepared: (06/13/07 A	nalyzed: 06	5/15/07			
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	46.1		ug/l	50.0		92.2	80-120			
Surrogate: 4-Bromofluorobenzene	41.1		"	50.0		82.2	80-120			
LCS (EF71312-BS1)				Prepared: (06/13/07 A	nalyzed: 06	6/15/07			
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	н	0.100		94.5	80-120			
Xylene (0)	0.0527	0.00100	u	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		"	50.0		94.8	80-120			
Calibration Check (EF71312-CCV1)				Prepared: (06/13/07 A	nalyzed: 0	6/15/07			
Benzene	0.0493		mg/L	0.0500		98.6	80-120			
Toluene	0.0501		n	0.0500		100	80-120			
Ethylbenzene	0.0485		"	0.0500		97.0	80-120			
Xylene (p/m)	0.0906		11	0.100		90.6	80-120			
Xylene (0)	0.0506		"	0.0500		101	80-120			
Surrogate: a,a,a-Trifluorotoluene	-48,6		ug.1	50.0		97.2	80-120			
Surrogate: 4-Bromofluorobenzene	46.8		"	50.0		93.6	80-120			
Matrix Spike (EF71312-MS1)	Sou	rce: 7F12005-	03	Prepared: (06/13/07 A	nalyzed: 0	6/15/07			
Benzene	0.0494	0.00100	mg/L	0.0500	ND	98.8	80-120			
Toluene	0.0505	0.00100	н	0.0500	ND	101	80-120			
Ethylbenzene	0.0534	0.00100	u	0.0500	ND	107	80-120			
Xylene (p/m)	0.0936	0.00100	"	0.100	ND	93.6	80-120			
Xylene (0)	0.0523	0.00100	н	0.0500	ND	105	80-120			
Surrogate: a,a,a-Trifluorotoluene	50.4		ugʻl	50.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	47.1		"	50.0		94.2	80-120			

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Rice Operating Co.	Project: EME Jct. A-2-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

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)

Matrix Spike Dup (EF71312-MSD1)	Source: 7F12005-03			Prepared: 0	nalyzed: 0	5/15/07				
Benzene	0.0478	0.00100	mg/L	0:0500	ND	95.6	80-120	3.29	20	
Toluene	0.0495	0.00100	н	0.0500	ND	99.0	80-120	2.00	20	
Ethylbenzene	0.0523	0.00100	и	0.0500	ND	105	80-120	1.89	20	
Xylene (p/m)	0.0913	0.00100		0.100	ND	91.3	80-120	2.49	20	
Xylene (0)	0.0506	0.00100	"	0.0500	ND	101	80-120	3.88	20	
Surrogate: a,a,a-Trifluorotoluene	49.5		ug/l	50.0		99.0	80-120			
Surrogate: 4-Bromofluorobenzene	47.1		"	50.0		94.2	80-120			

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Rice Operating Co.		Pr	oject: EN	ME Jct. A-2-1					Fax: (505)	397-1471
122 W. Taylor		Project Nu	mber: No	one Given						
Hobbs NM, 88240		Project Mar	nager: Kr	istin Farris-P	ope					
General C	hemistry Par	ameters by	EPA /	Standard	Method	ls - Qua	lity Con	trol		
		Environm	ental I	lab of Te	xas					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF71403 - General Preparation (WetChem)									
Blank (EF71403-BLK1)				Prepared &	2 Analyzed	06/14/07				
Total Alkalinity	ND	2.00	mg/L							
LCS (EF71403-BS1)				Prepared &						
Bicarbonate Alkalinity	170	2.00	mg/L	200	<u> </u>	85.0	85-115			
Duplicate (EF71403-DUP1)	Sou	urce: 7F11010-	01	Prepared &	k Analyzed	: 06/14/07				
Total Alkalinity	320	2.00	mg/L		320			0.00	20	
Reference (EF71403-SRM1)				Prepared & Analyzed: 06/14/07						
Total Alkalinity	250		mg/L	250		100	90-110			
Batch EF71504 - General Preparation (WetChem)									
Blank (EF71504-BLK1)				Prepared &	z Analyzed	: 06/15/07				
Sulfate	ND	0.500	mg/L							
Chloride	ND	0.500								
LCS (EF71504-BS1)				Prepared &	& Analyzed	: 06/15/07				
Sulfate	10.1	0.500	mg/L	10.0		101	80-120			
Chloride	9.83	0.500	н	10.0		98.3	80-120			
Calibration Check (EF71504-CCV1)				Prepared &	& Analyzed	: 06/15/07				
Chloride	9.07		mg/L	10.0		90.7	80-120			
Sulfate	12.0		"	10.0 120 80-120						
Duplicate (EF71504-DUP1)	So	urce: 7F11014-	01	Prepared &						
Sulfate	104	12.5	mg/L		104			0.00	20	
Chloride	734	12.5	"		0.410	20				

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Rice Operating Co.	Project: EME Jct. A-2-1	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

Reporting			Spike	Source		%REC			
Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
etChem)									
Sour	ce: 7F11017-	01	Prepared &	Analyzed:					
76.7	5.00	mg/L		77.6			1.17	20	
67.9	5.00			69.9			2.90	20	
Sour	ce: 7F11014-	01	Prepared &						
992	12.5	mg/L	250	731	104	80-120			
354	12.5	н	250	104	100	80-120			
Sour	Source: 7F11017-01			Analyzed:	06/15/07				
174	5.00	mg/L	100	77.6	96.4	80-120			
168	5.00	"	100	69.9	98.1	80-120			`
etChem)									
			Prepared: (06/12/07 A	nalyzed: 06	5/15/07			
ND	10.0	mg/L							
Sour	ce: 7F11009-	01	Prepared: (06/12/07 A	nalyzed: 06	5/15/07			
24600	10.0	mg/L		6.72	20				
Sou	·ce: 7F11014-	03	Prepared:						
	Result (etChem) 76.7 67.9 Sour 992 354 Sour 174 168 (etChem) ND Sour 24600	Reporting Limit Result Limit Source: 7F11017- 76.7 5.00 67.9 5.00 Source: 7F11014- 992 12.5 354 12.5 Source: 7F11017- 174 5.00 168 5.00 YetChem) 10.0 Source: 7F11009- 24600 10.0 Source: 7F11014-	Reporting Limit Units fetChem)	Reporting Spike Result Limit Units Level 'etChem) Source: 7F11017-01 Prepared & 76.7 5.00 mg/L 67.9 67.9 5.00 " 992 12.5 mg/L 250 354 12.5 " 250 250 100 168 5.00 " 100 168 5.00 " 100	Reporting Result Spike Limit Source Level Source Result fetChem) Source: 7F11017-01 Prepared & Analyzed: 76.7 5.00 mg/L 77.6 67.9 5.00 " 69.9 Source: 7F11014-01 Prepared & Analyzed: 992 992 12.5 mg/L 250 354 12.5 " 250 104 Source: 7F11017-01 Prepared & Analyzed: 104 104 Source: 7F11017-01 Prepared & Analyzed: 104 104 Source: 7F11017-01 Prepared & Analyzed: 104 104 Source: 7F11017-01 Prepared: 06/12/07 A 168 5.00 " 100 69.9 retChem) Prepared: 06/12/07 A ND 10.0 mg/L Source: 7F11009-01 Prepared: 06/12/07 A 24600 10.0 mg/L 23000 Source: 7F11014-03 Prepared: 06/12/07 A	Reporting Result Spike Limit Source Units Source Result Source %REC retChem) Source: 7F11017-01 Prepared & Analyzed: 06/15/07 76.7 5.00 mg/L 77.6 67.9 5.00 " 69.9 Source: 7F11014-01 Prepared & Analyzed: 06/15/07 992 12.5 mg/L 250 731 104 354 12.5 " 250 104 100 Source: 7F11017-01 Prepared & Analyzed: 06/15/07 104 100 <td>Reporting Result Spike Limit Source Result Source %REC Limits %REC Limits retChem) Source: 7F11017-01 Prepared & Analyzed: 06/15/07 Image: Compare the second se</td> <td>Reporting Result Spike Limit Source VertChem Spike Level Source Result %REC %REC KepD *etChem ************************************</td> <td>Reporting Result Spike Limit Source Result %REC %REC %REC Limits RPD RPD RPD Limit 'etChem) </td>	Reporting Result Spike Limit Source Result Source %REC Limits %REC Limits retChem) Source: 7F11017-01 Prepared & Analyzed: 06/15/07 Image: Compare the second se	Reporting Result Spike Limit Source VertChem Spike Level Source Result %REC %REC KepD *etChem ************************************	Reporting Result Spike Limit Source Result %REC %REC %REC Limits RPD RPD RPD Limit 'etChem)

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

Project: EME Jct. A-2-1 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 EF71902 - 6010B/No Digestion

Blank (EF71902-BLK1)				Prepared & A	Analyzed: 00	5/19/07				
Calcium	ND	0.0810	mg/L							···
Magnesium	ND	0.0360	•							
Potassium	ND	0.0600	"							
Sodium	ND	0.0430	н							
Calibration Check (EF71902-CCV1)				Prepared & A	Analyzed: 0	5/19/07				
Calcium	2.04		mg/L	2.00		102	85-115			
Magnesium	2.00			2.00		100	85-115			
Potassium	2.13		11	2.00		106	85-115			
Sodium	2.04		"	2.00		102	85-115			
Duplicate (EF71902-DUP1)	Sour	ce: 7F11010-	01	Prepared & A	Analyzed: 0	6/19/07				
Calcium	956	40.5	mg/L		940		_	1,69	20	
Magnesium	337	3.60	"		346			2.64	20	
Potassium	29.9	0.600	n		30.9			3.29	20	
Sodium	2970	21.5			2940			1.02	20	

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Page 9 of 10

Rice Oper 122 W. Ta Hobbs NN	ating Co. Iylor 1, 88240	Project: Project Number: Project Manager:	EME Jct: A-2-1 None Given Kristin Farris-Pope	Fax: (505) 397-1471
		Notes and De	finitions	
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:

Celey D. Keene, Org. Tech Director

Raland K. Tuttle, Laboratory Consultant

Bren Barron

Date: 6/27/2007

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.

Brent Barron, Laboratory Director/Corp. Technical Director

Environmental Lab of Texas

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Page 10 of 10



Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client	Rice
Date/ Time:	6-11-07 4:30
Lab ID # :	7511015
Initials:	al

Sample Receipt Checklist

				Client	t Initials
#1	Temperature of container/ cooler?	Tes	No	S.D°C	
#2	Shipping container in good condition?	YES	No		
#3	Custody Seals intact on shipping container/ cooler?	(es)	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Tes	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	Tes	No		
#8	Chain of Custody agrees with sample label(s)?	Tes	No	ID written on Cont./Lid	
7 9	Container label(s) legible and intact?	Yes	No	Not Applicable	
\$10	Sample matrix/ properties agree with Chain of Custody?	tes	No		
¥11	Containers supplied by ELOT?	X#85	No		
¥12	Samples in proper container/ bottle?	XED	No	See Below	
¥13	Samples properly preserved?	Nes	No	See Below	
¥14	Sample bottles intact?	Yes	No		
¥15	Preservations documented on Chain of Custody?	Fes	No		
116	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	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
\$20	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

Contact:		Contacted by:	 Date/ Time:	
Regarding:			 	
Corrective Action Tak	en:			
	<u></u>		 	••••••••••••••••••••••••••••••••••••
theck 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 (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 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 JUNCTION A-2-1 Project Location: T20S-R36E-SEC2 A ~ LEA COUNTY -NEW MEXICO Sampling Date: 08/21/07 Sample Type: WATER Sample Condition: COOL & INTACT Sample Received By: BC Analyzed By: AB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DA	ΓE	08/23/07	08/23/07	08/23/07	08/23/07
H13152-1	MONITOR WELL #1	0.034	0.004	0.012	0.022
H13152-2	MONITOR WELL #2	<0.004	<0.004	<0.004	<0.012
H13152-3	MONITOR WELL #3	<0.004	<0.004	<0.004	<0.012
Quality Control		0.096	0.085	0.086	0.264
True Value QC	n a na sharan na sana ann ann ann an ann an ann ann	0.100	0.100	0.100	0.300
% Recovery	n de transmission (normen en esta de la construction en la social de la construction de la construction de la c	96	85	86	88
Relative Percer	nt Difference	0.9	1.8	0.8	2.8

METHOD: EPA SW-846 8021B

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8049

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 JUNCTION A-2-1 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

120.1

310.1

				1418	n in	Conductivity	r-Aikannity
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(<i>u</i> S/cm)	(mgCaCO ₃ /L)
ANALYSIS DAT	"E:	08/23/07	08/23/07	08/23/07	08/23/07	08/23/07	08/23/07
H13152-1	MONITOR WELL #1	7605	559	254	11.8	30,700	560
H13152-2	MONITOR WELL #2	8068	665	270	11.4	33,300	640
H13152-3	MONITOR WELL #3	8067	439	161	11.5	28,800	640
Quality Control		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:

SM3500-Ca-D 3500-Mg E

		CI	SO_4	CO_3	HCO ₃	pН	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS D	ATE:	08/23/07	08/23/07	08/23/07	08/23/07	08/23/07	08/23/07
H13152-1	MONITOR WELL #1	8197	6611	0	683	6.85	23,775
H13152-2	MONITOR WELL #2	8797	7005	0	781	6.76	26,155
H13152-3	MONITOR WELL #3	7798	7381	0	781	6.85	21,200
Quality Contr	rol	520	25.4	NR	939	6.95	NR
True Value C	C	500	25.0	NR	1000	7.00	NR
% Recovery	i has duinnadh féisidden an aid bhannach. Cainleit fa fre undersinn fearaint fheith frinkrisin sinteriors runni	104	101	NR	93.9	99.3	NR
Relative Perce	cent Difference	3.9	1.1	NR	1.4	< 0.1	NR
METHODS:	anna an	SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

METHODS:

08128/07 Date

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Mexico Tel (505) 3 Fax (505) 3	88240 393-2326 393-2476	5]			3			ñ				L				AB O	der I	# 0								
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Kristin Far	rris-Pope, Project Scientist		122 W T	aylor	Street	- Hobl	xs, Ne	w Mex	ico 882	240																	
Address: (\$	Street, City, Zip)			٩	hone#					Fax#:			r			2											
122 W Taylor \$	Street ~ Hobbs, New Mexico 88240		(505)	393	-917	*				(505	5)397-	1471				2.00										. <u></u>	
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Project #:	Project Name: EME Junction A-2-1				5	h. h.	\mathcal{N}								pəpu) 6H e	бн э										
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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 JUNCTION A-2-1 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

				ETHYL	TOTAL
		BENZENE	TOLUENE	BENZENE	XYLENES
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)
ANALYSIS DA	TE	12/06/07	12/06/07	12/06/07	12/06/07
H13850-1	MONITOR WELL #1	0.088	< 0.001	0.021	0.010
H13850-2	MONITOR WELL #2	<0.001	<0.001	< 0.001	< 0.003
H13850-3	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 Perce	nt Difference	1.7	1.6	1.5	1.4

METHOD: EPA SW-846 8021B

Date

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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

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Receiving Date: 12/05/07 Reporting Date: 12/11/07 Project Number: NOT GIVEN Project Name: EME JUNCTION A-2-1 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

Conductivity

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LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(<i>u</i> S/cm)	(mgCaCO ₃ /L)
ANALYSIS DAT	E:	12/10/07	12/10/07	12/10/07	12/10/07	12/07/07	12/07/07
H13850-1	MONITOR WELL #1	7,903	420	230	11.4	31,900	684
H13850-2	MONITOR WELL #2	8,069	552	246	10.7	33,200	708
H13850-3	MONITOR WELL #3	7,869	526	266	33.2	33,100	696
		· · ·					
Quality Control		NR	49.2	50.8	2.88	1,404	NR
True Value QC		NR	50.0	50.0	3.00	1,413	NR
% Recovery		NR	98.5	102	96.0	99.4	· NR
Relative Percer	nt Difference	NR	< 0.1	1.6	12.4	1.3	NR
METHODS:	••	SM	3500-Ca-D	3500-Mg E	8049	120.1	310,1
		CI	SO₄	CO₃	HCO₃	pН	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
H13850-1	MONITOR WELL #1	8,800	5,870	0	834	7.05	23,481
H13850-2	MONITOR WELL #2	8,800	6,570	0	864	6.93	25,329
H13850-3	MONITOR WELL #3	8,600	6,480	0	849	6.90	24,814
Quality Control	······································	500	20.0	ND	1000	7.04	ND
True Velue OC		500	20.0		1000	7.04	
V Persue QC		500	25.0		1000	7.00	NR
D lat D		100			100	101	NR
Relative Percer	IL DIMERENCE	2.0	5.8	NR	1.2	0.1	NR

METHODS: SM4500-CI-B 375.4 310.1 310.1 150.1 160.1

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12/11/0-Date

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 1323 by 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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A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

W COUNTY ROAD 30 MIDLAND, TX 79758

COORDINATES

 Latitude (North):
 32.042670 - 32° 2' 33.6"

 Longitude (West):
 102.303220 - 102° 18' 11.6"

 Universal Tranverse Mercator:
 Zone 13

 UTM X (Meters):
 754654.1

 UTM Y (Meters):
 3548158.5

 Elevation:
 2931 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: Most Recent Revision: 32102-A3 HACKBERRY LAKE, TX 1974

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL.	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	_ National Priority List Deletions
NPL LIENS	Federal Superfund Liens
CERCLIS	Comprehensive Environmental Response. Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Transporters, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators



Search results for St Mary Land and Exploration company

- St Maryland & Exploration Co 580 Westlake Park Blvd, Houston, TX 15.71mi (281) 496-0977
- St Mary Land & Exploration Co 580 Westlake Park Blvd, Houston, TX 15.71mi (281) 677-2800



http://maps.live.com/print.aspx?mkt=en-us&z=10&s=r&cp=29.760486591201203,-95.369... 3/20/2008