

AP - 42

**STAGE 1 & 2  
REPORTS**

**DATE:**

**8-9-10**

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Infrastructure, environment, buildings

RECEIVED OOD

2010 AUG 12 A 11: 09

ARCADIS U.S.  
1004 North Big Spring Street  
Suite 300  
Midland  
Texas 79701  
Tel 432 687 5400  
Fax 432 687 5401  
www.arcadis-us.com

Sent Certified Mail  
Return Receipt No. 7002 2410 0001 5813 3692

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

Environmental

Subject:

**TERMINATION REQUEST  
Jct. M-16-1, EME SWD SYSTEM  
UNIT 'M', SEC. 16, T20S, R37E  
NMOCD CASE # AP-42**

Date:  
August 9, 2010

Contact:  
Sharon E. Hall

Mr. Hansen:

On behalf of Rice Operating Company (ROC), ARCADIS U.S., Inc. (ARCADIS) respectfully submits this Termination Request for the above-referenced site.

Phone:  
432 687-5400

NMOCD approved ROC's Stage 2 Abatement Plan on May 12, 2009. The Stage 2 Abatement Plan called for revegetation of the site and proposed an estimation of the chloride mass that has contaminated the groundwater at the former junction box locations and a plan for the removal of that chloride mass. The approved chloride mass estimation and plan for removal is as follows:

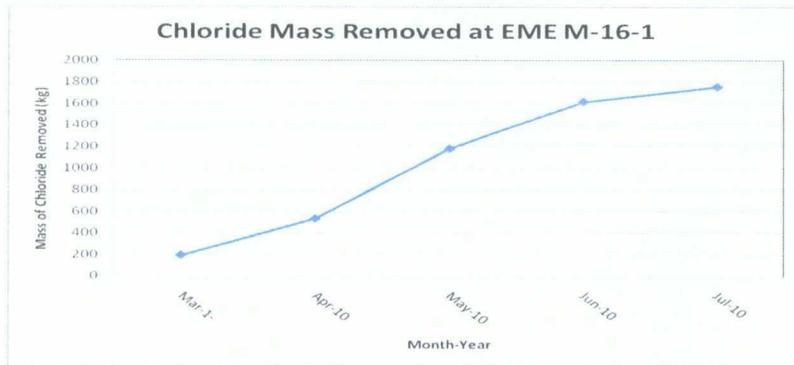
Email:  
[sharon.hall@arcadis-us.com](mailto:sharon.hall@arcadis-us.com)

ROC proposed, and NMOCD approved, the installation of a groundwater recovery system at the former M-16-1 junction box location to recover an estimated 1,444.15 kilograms (kg) of chloride mass. A solar-driven pump was placed in well RW-1, a 4-inch recovery well. The pump generally operated 8-10 hours per day and the groundwater recovered from the well was pumped into a tank.

Our ref:  
MT000857.0001

As of July 14, 2010, a total of 181,818 gallons of groundwater has been recovered from the recovery well, RW-1. This equates to a total recovered chloride mass of 1,755.05 kg. The following graph depicts the cumulative chloride mass removed at the site since recovery began in March 2010. The chloride mass removal estimate is based on a chloride concentration of 2,550 milligrams per liter (see attached laboratory report.)

Ed Hansen  
August 9, 2010



The recovery system was dismantled, the bermed area was removed, and clean imported soil blended with hay was used to contour the site to the surrounding area. Additional amendments, organic compost and peat moss, were added to the soil and the site was seeded on July 23, 2010. Seeding documentation is attached.

Upon NMOCD approval of this Termination Request, monitoring wells MW-1, MW-2, MW-3, MW-4 and recovery well RW-1 will be plugged using a cement grout with 1 to 3% bentonite. MW-5 will continue to be periodically sampled to monitor regional groundwater impacts.

ROC has met all abatement requirements in accordance with 19.15.30 NMAC, and respectfully requests termination of the regulatory file for this site.

ROC is the service provider (agent) for the EME Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. The EME SWD System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Thank you for your consideration concerning this request for site termination. If you have any questions please contact Hack Conder at (575) 393-9174.

Sincerely,  
ARCADIS.

Sharon E. Hall  
Associate Vice President

Copies:  
Hack Conder, ROC

Attachments:  
Site Photographs  
Revegetation Form  
Laboratory Report

EME Jct. M-16-1 (AP-42)  
Unit M, Sec. 16, T20S, R37E



groundwater recovery system



spreading top soil blended with hay



adding amendments



seeding the site



tilling in seed and amendments



site complete



112 West Taylor  
 Hobbs, NM 88240  
 Phone: (575) 393-9174  
 Fax: (575) 393-0293

## REVEGETATION FORM

### 1. General Information

Site name: EME M-16-1						
U/L M	Section 16	Township 20S	Range 37E	County LEA	Latitude N 32* 34, 114'	Longitude W103* 15, 739'
Contact Name: BRUCE BAKER						
Email: <a href="mailto:bbaker@riceswd.com">bbaker@riceswd.com</a>						
Site size: 5,727 square feet			Map detail of site attached <input type="checkbox"/>			
Additional information:						

### 2. Soils

*\*Do not rip caliche subsoils; caliche rocks brought to the surface by ripping shall be removed.*

Salvaged from site <input type="checkbox"/>	Bioremediated <input type="checkbox"/>	Imported <input checked="" type="checkbox"/>	Blended <input checked="" type="checkbox"/>	Depth (in):
Texture:		Describe soil & subsoil:		
Soil prep methods: Rip <input type="checkbox"/>	Depth(in):	Disc <input checked="" type="checkbox"/>	Depth (in):	Rollerpack <input type="checkbox"/>
Date completed: 7/23/2010				

### 3. Bioremediation

Fertilizer <input checked="" type="checkbox"/>	Hay <input checked="" type="checkbox"/>	Other <input checked="" type="checkbox"/>
Type: 13-13-13-13	Describe: 100LBS OF PEAT MOSS 100LBS OF ORGANIC COMPOST	
Lbs/acre: 50LBS.		

### 4. Seeding

*\*Attach seed bag tags to this form. Seed bag tags shall contain the site name and S-T-R.*

Custom seed mix <input checked="" type="checkbox"/>	Prescribed mix <input type="checkbox"/>	Seed mix name: 5lbs.PECOS MIX AND 5lbs.BLUE GRAMA	Seeding date: 7/23/2010
Broadcast <input checked="" type="checkbox"/>			
Method: HAND			
Soil conditions during seeding:	Dry <input checked="" type="checkbox"/>	Damp <input type="checkbox"/>	Wet <input type="checkbox"/>
Photos attached <input checked="" type="checkbox"/>	Observations:		
Number of photos:			

### 5. Certification

I hereby certify that the information in this form and attachments is true and complete to the best of my knowledge and belief.

Name: Robert Egans	Title: Environmental Tech.	Date: 8-4-2010
Signature: <i>Robert Egans</i>		



**ARDINAL  
LABORATORIES**

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

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July 13, 2010

Hack Conder  
Rice Operating Company  
112 West Taylor  
Hobbs, NM 88240

Re: EME M-16-1

Enclosed are the results of analyses for sample number H20280, received by the laboratory on 07/07/10 at 8:15 am.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

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

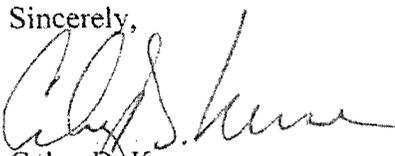
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,



Celey D. Keene  
Laboratory Director

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This report conforms with NELAP requirements.





**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**ARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

Company Name: Rice Operating Company		<b>BILL TO</b>		ANALYSIS REQUEST	
Project Manager: Hack Conder		P.O. #:			
Address: 122 West Taylor		Company:			
City: Hobbs		Attn:			
Phone #: 393-9174		Address:			
Project #:		City:			
Project Name: EME M-16-1		State:			
Project Location: EME M-16-1		Phone #:			
Sampler Name: Jordan Woodfin		Fax #:			
FOR LAB USE ONLY		MATRIX		PRESERV.	
Lab I.D. Sample I.D.		# CONTAINERS		ACID/BASE	
H20280-1		1		ICE / COOL	
Water from RW-1		(GRAB OR COMP.)		OTHER:	
		GROUNDWATER		OTHER:	
		WASTEWATER		SLUDGE	
		SOIL		DATE	
		OIL		TIME	
		MATERIAL		7/6/10	
				02:00	
				✓	
				Chlorides	
				TPH 8015 M	
				BTEX	
				Texas TPH	
				Complete Cations/Anions	

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 the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event 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 or affiliates of 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 theories or otherwise.

Relinquished By: <i>Jordan Woodfin</i>	Date: 7/6/10	Received By: <i>Jodi Benson</i>	Time: 5:15
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool <input type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	Checked By: <i>JW</i>	Initials: <i>JW</i>
Remarks: email results		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		Add'l Phone #:	
		Add'l Fax #:	
		Hconder@riceswd.com; jwoodfin@riceswd.com;	
		Lweinheimer@riceswd.com	

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

#26

NEED SAMPLES BACK, PLEASE