1R - 427-169

WORKPLANS

3-10-09

L. Peter Galusky, Jr. Ph.D., P.G.

12427-169

Texerra

March 10th, 2009

Mr. Brad Jones

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe. New Mexico 87504 RECEIVED

Environmental Bureau
Oil Conservation Division

RE:

Investigation and Characterization Plan Rice Operating Company – EME SWD System EME N-18 Boot: UL N Sec 18 T 20S R 37E

Sent via E-mail & U.S. Certified Mail w/ Return Receipt 7006 0100 0001 2438 3913

Dear Mr. Jones:

RICE Operating Company (ROC) has retained Texerra to address potential environmental concerns at the above-referenced site located in the EME SWD system. ROC is the service provider (agent) for the EME SWD System and has no ownership of any portion of the pipeline, well, or facility. The System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Environmental projects of this magnitude require System Partner AFE approval, and work begins as funds are received. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission would be greatly appreciated.

For all such environmental projects, ROC will choose a path forward that:

- protects public health,
- provides the greatest net environmental benefit,
- · complies with NMOCD Rules, and
- is supported by good science.

Each site shall generally have three submissions, as described below:

- 1. This <u>Investigation and Characterization Plan</u> (ICP) is proposed for data gathering and site characterization and assessment.
- 2. Upon evaluating the data and results from the ICP, a recommended remedy will be submitted in a <u>Corrective Action Plan (CAP)</u> if this is warranted.
- 3. Finally, after implementing the remedy, a <u>Closure Report</u> with final documentation will be submitted.

Background and Previous Work

The site is located approximately 3.7 miles south of Monument, New Mexico (Figure 1). The topography is gently sloping toward the southeast. Soils on the location are characterized in the Lea County Soil Survey as moderately deep to deep sandy soils that are underlain by hard caliche. NM OSE records indicate that groundwater is likely to be encountered at a depth of 35+/- feet in unconsolidated Tertiary alluvium of the Ogallala Formation.

ROC removed a wooden junction box at this location in August of 2004 as part of its facility maintenance and upgrade program. (See Figure 2: Rice Junction Box Disclosure Report). As the original wood junction box was removed soils were sampled using a backhoe, creating a 20 by 10 by 12 ft deep excavation. The excavated soils were blended and then backfilled into the excavation to a depth of 6 ft bgs where a one foot thick compacted clay barrier was installed (Figure 3). The remaining excavated soil material was backfilled into the excavation above the clay barrier to the existing ground surface. The disturbed surface was then seeded with a native vegetation mix.

It should be noted that there is no longer a threat of continued, compounded impact at this site as the former junction box has been removed and a clay barrier installed to impede the downward migration of chlorides.

Chloride concentrations exceeded 1,000 ppm adjacent to the former junction box at 12 ft bgs (Figure 4). Insignificant concentrations (< 100 ppm) of gasoline (GRO) and diesel range organics (DRO) were encountered in the excavated soil and in the sidewalls and bottom of the excavation (Figure 5). Petroleum hydrocarbons were therefore ruled out as a potential constituent of concern. Photographs before, during and after junction box removal are given in Figures 6 through 10.

ROC proposes additional investigative work to determine if there is the potential for groundwater degradation from residual soil chlorides, which are the constituent of concern, as outlined below.

Proposed Work Elements

- 1. Summarize information and data collected by ROC to date.
- 2. Summarize additional, publicly available regional and local hydrological information.
- 3. Conduct vertical and lateral delineation of soil <u>chlorides</u>. If warranted, install a monitor well to provide a direct measurement of potential groundwater impact. [All monitoring wells will be constructed per NM Dept. Environment standards].
- 4. Evaluate the risk of groundwater impact in light of the information obtained.

If the evaluation demonstrates that residual constituents pose no threat to ground water quality, then only a surface restoration plan will be proposed to OCD. If this work indicates that there is a present or future risk of impacting groundwater quality from past operations at this location, then a corrective action plan (CAP) will be developed and proposed to OCD.

I appreciate the opportunity to work with you and your staff on these projects. Please call either myself, at the number below, or Hack Conder (ROC) at 575-393-9174, if you have any questions or wish to discuss these matters.

Thank you for your consideration.

Sincerely,

L. Peter (Pete) Galusky, Jr. Ph.D., P.G.

Principal

Texerra

505 N. Big Spring, Suite 404 Midland, Texas 70701

Tel: 432-634-9257

E-mail: lpg@texerra.com
Web site: www.texerra.com

cc: Rice Operating Company, Ed Hansen (NMOCD)

Attachments: Site Maps, Junction Box Disclosure Reports as noted



		JUNCTIO	IN BOX DISCL	OSURE REPO	KT		
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	N-16 LLAI,			⊥."" l	/ Eq.	bay Alminaide	
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		_			Width 20		
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Figure 2 – EME N-18 Boot Disclosure Report

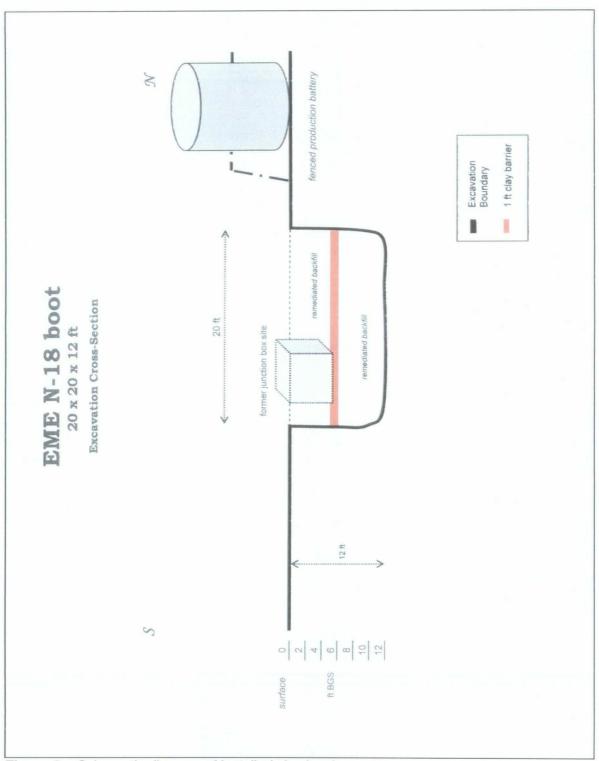


Figure 3 – Schematic diagram of installed clay barrier.

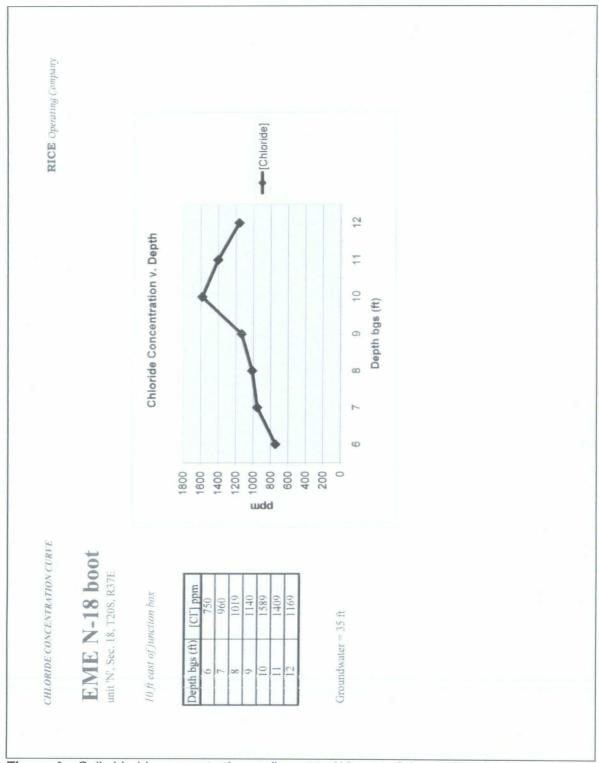


Figure 4 – Soil chloride concentrations adjacent to (10 east of) former junction box.

Rice Operating Co. 122 W. Taylor Hobbs NM, 88240	Project: N-18 Boot Project Number: None Given Project Manager: Roy Rascon				Fax: (505) 397-147 Reparted: 09/01/04 08:26				
<u> </u>		Or	ganics b	y GC					
		Environ	nental I	ab of 7	Fexas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
12' Bottom Composite (4H26002-01)	Seil								
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EH42629	08/26/04	08/26/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	•			*	*	*	
Total Hydrocarbon C6-C35	ND	10.0	•			•		•	
Surrogate: 1-Chlorooctane		99.6 %	70-1	130			-	M	
Surrogate: 1-Chlorooctadecane		7 5.2 %	70-1	130	•	-	•	•	
Wall Composite (4H26092-02) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EH42629	08/26/04	08/26/04	EPA 8015M	
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Total Hydrocarbon C6-C35	ND	10.0	•	•	*	•	•	•	
Surrogate: I-Chlorooctane		89.8 %	70-1	30		*	*	"	
Surrogate: 1-Chlorooctadecane		72. 6 %	70-1	30	"	*	*	*	
Backfill Composite (4H26002-03) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EH42629	08/26/04	08/26/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0			•	•	•		
Total Hydrocarbon C6-C35	ND	10.0	•	•	•	•	•	•	
Surrogate: 1-Chlorooctane		86.4 %	70-1	30	-	,,	*	•	
Surrogate: 1-Chlorooctadecane		7 6.8 %	70-1	30	*	*	,	*	
Environmental Lab of Texas		The res	The results in this report apply to the samples analyzed in accordance with the sample received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas. Page 2 of						

Figure 5 – Laboratory confirmation of DRO and GRO soil samples.



Figure 6 – Former junction box before removal.



Figure 7 – Former junction box before removal, close-up view.



Figure 8 – Excavation following removal of former junction box.



Figure 9 – Compaction testing of installed clay barrier.



Figure 10 – Raking and seeding of reclaimed site.