1R - 427-174

REPORTS

DATE:

3-7-08

Hansen, Edward J., EMNRD

From: L. Peter Galusky, Jr. P.E. [lpg@texerra.com]
Sent: Wednesday, August 27, 2008 2:22 PM
To: Hansen, Edward J., EMNRD
Cc: Hack Conder; Lara Weinheimer
Subject: Fw: Rice Operating Company - EME State Q EOL OCD Case Number: 1R427-174
Attachments: 2600157797-EME State Q ICP Report & Closure Request.pdf; EME State Q EOL 8.15.08 revegetation 1.JPG; EME State Q EOL 8.15.08 revegetation 2.JPG

Edward,

Please find attached a couple of recent (August 15th) photographs of the above-referenced site. I believe that these provide further evidence that surface effects associated with the operation of the former junction box were negligeable, as the vegetation just beyond the caliche pad (which is used by trucks to service a tank battery) natural vegetation is apparently unaffected.

I thus respectfully ask your consideration of our request for closure of this site.

Please call me if you have any questions or wish to discuss.

Thank you.

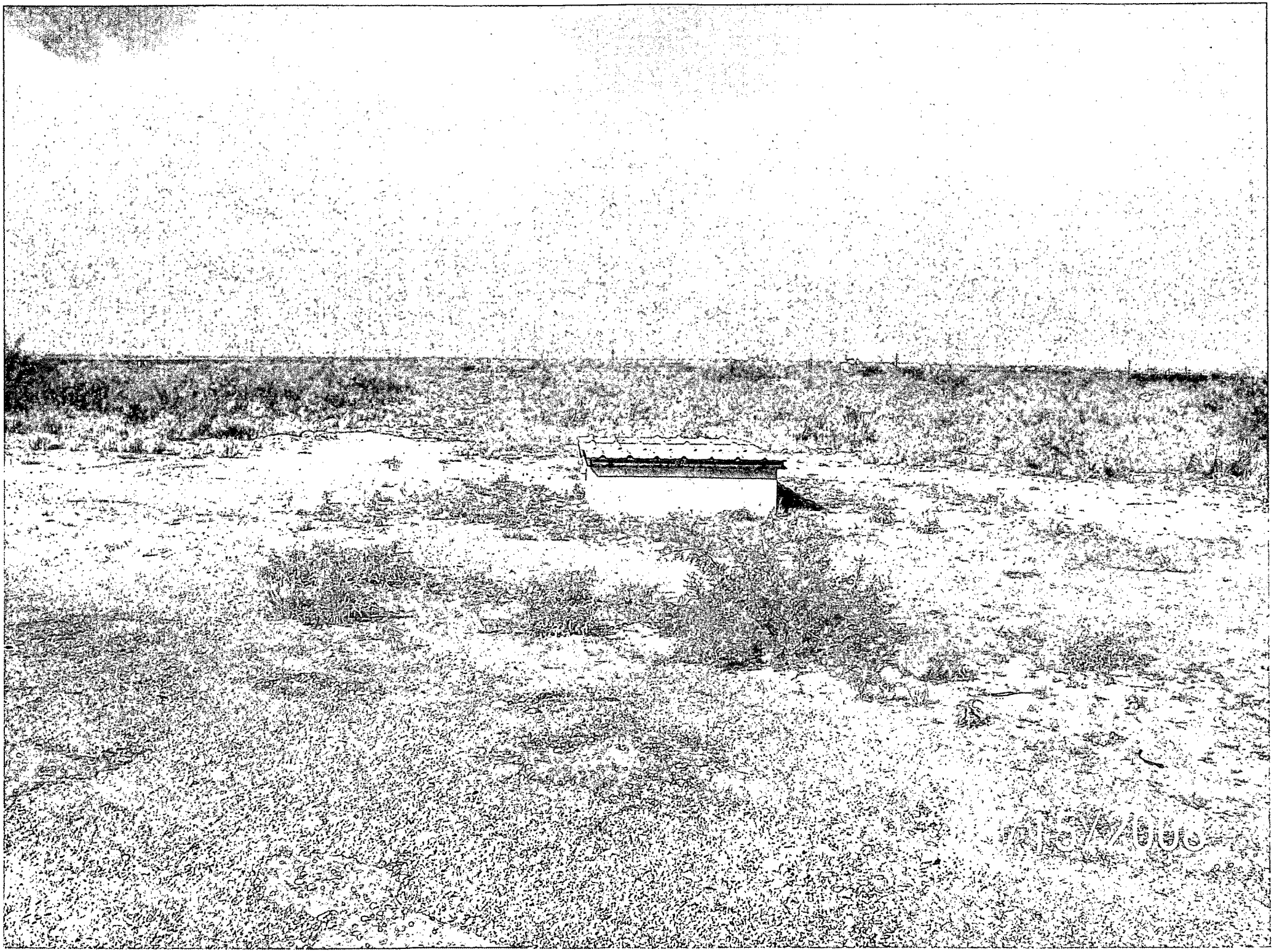
Sincerely,

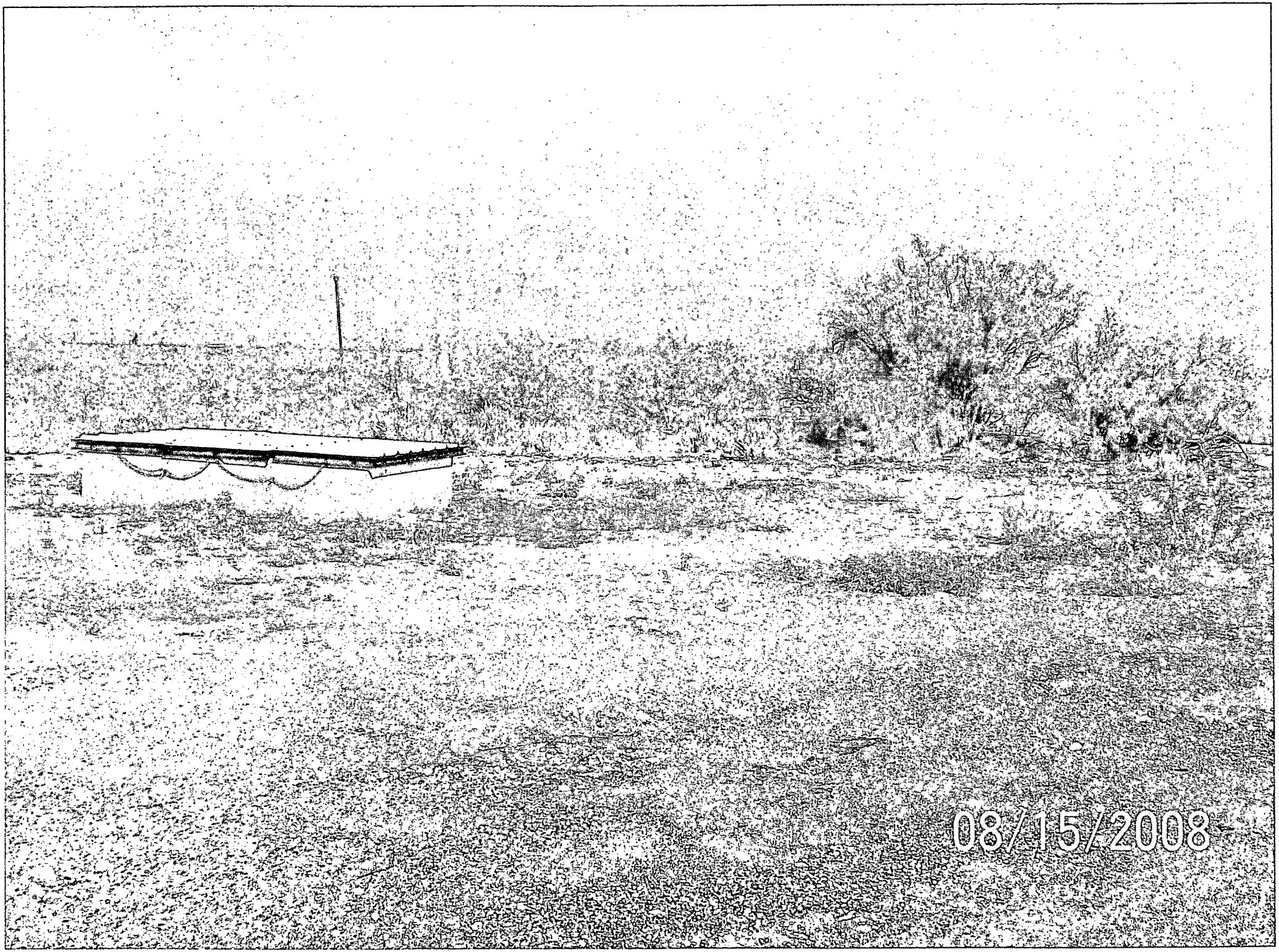
L. Peter (Pete) Galusky, Jr. Ph.D.
Texerra
Cell: 432-634-9257

--- On **Fri, 3/7/08, L. Peter Galusky, Jr. P.E. *<lpg@texerra.com>*** wrote:

> From: L. Peter Galusky, Jr. P.E. <lpg@texerra.com>
> Subject: Rice Operating Company - EME State Q EOL OCD Case Number: 1R427-174
> To: "Edward J. Hansen" <edwardj.hansen@state.nm.us>
> Cc: "Kristin Pope" <kpope@riceswd.com>
> Date: Friday, March 7, 2008, 2:18 PM
>
> Dear Mr. Hansen,
>
> Please find attached the Investigation and Characterization Report for the above-referenced project. A hard copy of this will be sent to you via certified U.S. mail.
>
> Thank you for your consideration.
>
> Sincerely,
>
> Pete Galusky

L. Peter Galusky, Jr. Ph.D.
Principal
Texerra
Energy Square
505 N. Big Spring, Suite 404
Midland, Texas 79701
E-mail: lpg@texerra.com
Web: www.texerra.com
Office Telephone/Fax: 877-534-9001




08/15/2008

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

RECEIVED
2008 MAR 19 PM 3 44

March 7th, 2008

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

RE: **Investigation and Characterization Plan Report**
Rice Operating Company – EME SWD System
State Q EOL (UL Q Sec 16 T 20S R 37E)
OCD Case Number: 1R427-174

Sent via E-mail and Certified U.S. Mail, Return Receipt No. 7007 0710 0003 0305 3705

Dear Mr. Hansen:

My company completed a soils evaluation for the above-referenced site per the Investigation and Characterization Plan dated July 16th of 2007, and which your office subsequently approved.

A soil boring was advanced at/near the former junction box location[1] using a rotary auger drill on November 29th of last year (Figures 1 & 2). Samples were analyzed at five foot increments and field titrated for chlorides and tested for organics using a portable PID instrument (Table 1). Two sub-samples were sent to Cardinal Laboratories for a quality-check of the field results (Figures 3a & 3b).

Chlorides were somewhat elevated (880 ppm) at a depth of 15-20 ft bgs, but dropped to insignificant levels (< 350 ppm) below 20 ft depth, where stiff, red sandy clay was encountered and continued to the limit of evaluation at 35 ft. No groundwater was encountered, nor were measurable levels of organics detected.

Given the moderate levels of chlorides found near the ground surface, their precipitous decline to insignificant levels below 20 ft depth, the presence of impermeable clays in the substratum and the absence of groundwater, it is my opinion that the former junction box at this location does not pose a threat to groundwater. On behalf of my client, Rice Operating Company, I therefore request that this project be considered "closed" and dropped from OCD's list of potentially impacted sites.

[1] Although the exact location of the former junction box could not be determined, the soil boring was advanced as close to its apparent location as possible.

I welcome your thoughts on this matter, and would be pleased to discuss any details with you at your convenience.

Thank you for your consideration.

Sincerely,

L. Peter Galusky, Jr. Ph.D.
Principal

Enclosures: Investigation and Characterization Plan of July 16th, 2007

Copies: Kristin Pope, Rice Operating Company

Figure 1 – Atkins Engineering Associates drill rig at EME State Q EOL on November 29th, 2007, drilling at/near former junction box location. View looking east/southeast.

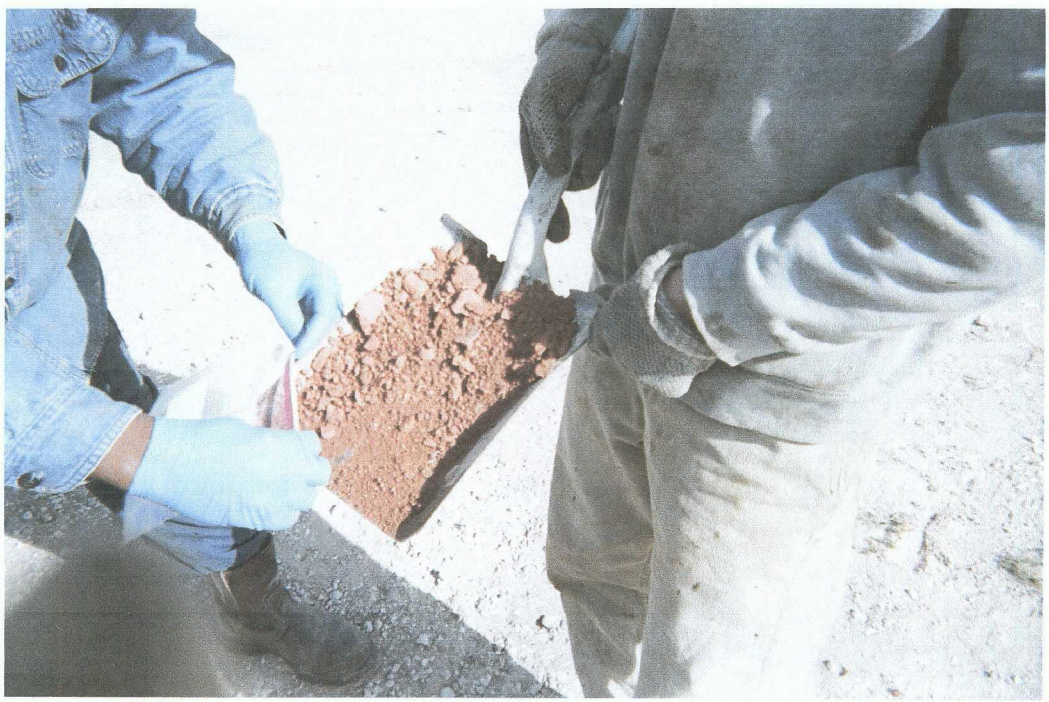


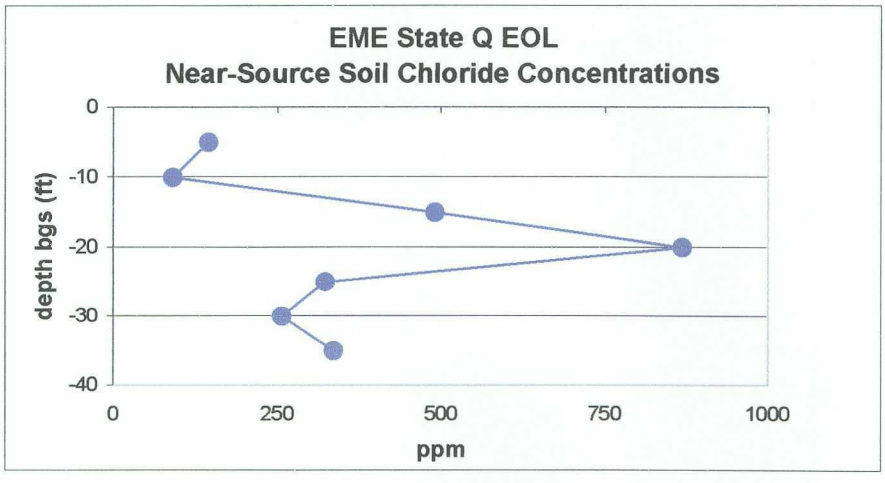
Figure 2 – View of "stiff red clay" substratum, encountered at/near former junction box location.

Table 1 – Soil boring log and chemical parameters at the site of the former junction box at EME State Q EOL.

Soil Boring Log
Rice Operating Company
EME Field SWD System
EME State Q EOL

Identification:	**SB-1**
Location:	Within an estimated 25 ft of former junction box location.
Date:	11/29/2007
Driller:	Atkins Engineering Associates, Inc.
Drill method:	Rotary auger
Logged by:	L. Peter Galusky, Jr., Texerra
Total depth:	35 ft below ground surface
Screened interval:	n/a (no well installed)
Pipe diameter:	"

Depth (ft below ground surface)	Field Chloride Test (ppm)	Lab Chloride Test (ppm)	Field OVM test (ppm)	Lab GRO test (ppm)	Lab DRO test (ppm)	Cutting Description
-5	145		0.4			light brown loamy sand
-10	91		1.1			"
-15	491		2.6			gray caliche
-20	869	880	0.4	< 10.0	< 10.0	light grayish brown caliche
-25	323		1.9			stiff red sandy clay
-30	257		2			"
-35	336	224	3.8	< 10.0	< 10.0	" ; no water



CARDINAL LABORATORIES

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

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

Receiving Date: 11/30/07
Reporting Date: 12/05/07
Project Owner: NOT GIVEN
Project Name: EME STATE 'Q' EOL
Project Location: NOT GIVEN

Sampling Date: 11/29/07
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: KS
Analyzed By: CK/HM

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{12}) (mg/kg)	DRO (>C_{12}-C_{28}) (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE		12/04/07	12/04/07	12/03/07
H13808-1	15'-20' SOIL BORE #1	<10.0	<10.0	880
H13808-2	30'-35' SOIL BORE #1	<10.0	<10.0	224
Quality Control		537	398	500
True Value QC		500	500	500
% Recovery		107	80	100
Relative Percent Difference		9.4	1.8	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Std. Methods 4500-ClB
*Analyses performed on 1:4 w:v aqueous extracts.

Chemist

12/5/07
Date

H13808TCL RICE

Figure 3a – Laboratory analyses.

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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	BILL TO	
Project Manager:	KRISTIN POPE	P.O. #:	
Address:	122 W TAYLOR	Company:	
City:	HOBBS State: NM Zip: 88240	Attn:	
Phone #:	393-9174 Fax #: 397-1471	Address:	
Project #:	Project Owner:	City:	
Project Name:	EME STATE Q EOL	State: Zip:	
Project Location:		Phone #:	
Sampler Name:	TONY GRIECO	Fax #:	

ANALYSIS REQUEST: CHLORIDE; THEOSM

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	CHLORIDE	THEOSM
H13808-1	15-20' SOIL BORE #1	C	1			✓					✓		11/27/07	10:30 AM	✓	✓
-2	30-35' SOIL BORE #1	C	1			✓					✓		11/27/07	11:30 AM	✓	✓

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 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 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 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.

Relinquished By:	Date: 11/30/07 Time: 3:26	Received By:	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials) KS	REMARKS: email results to Kpope@riceswd.com Livesmhemore@riceswd.com JPurvis@riceswd.com tgrieco@riceswd.com	

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

Figure 3b – Laboratory chain-of-custody form.

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

July 16th, 2007

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

RE: **Investigation and Characterization Plan**
Rice Operating Company – EME SWD System
State Q EOL (UL Q Sec 16 T 20S R 37E)

Sent via E-mail and U.S. Certified Mail: Return Receipt No. 7006 0100 0001 2438 3852

Dear Mr. Hansen:

RICE Operating Company (RICE) has retained Texerra to address potential environmental concerns at the above-referenced site. 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 Investigation and Characterization Plan (ICP) is a proposal 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 Corrective Action Plan (CAP) if this is warranted.

3. Finally, after implementing the remedy, a Closure Report with final documentation will be submitted.

Background and Previous Work

The site is located approximately three miles south/southeast of Monument in Lea County (Figure 1). The topography is gently sloping toward the southeast. Soils on the site are mapped in the Lea County Soil Survey as belonging to Pyote-Maljamar-Kermit soil association. These are characterized as gently undulating and rolling, sandy soils of six feet or more depth overlying caliche. Groundwater is believed to occur at a depth of approximately 25 +/- feet, occurring in unconsolidated Tertiary alluvium of the Ogallala Formation, and is believed to flow toward the southeast in the direction of the surface topographic gradient.

As part of their on-going SWD facility upgrades, Rice removed a wooden junction box (associated with a boot) at this location, and replaced it with a concrete junction box in November of 2004. The site was re-graded to natural contours and seeded to native grasses in June of 2005.

A grab soil sample taken 12 ft below the surface at the former junction box location found a diesel range organics (DRO) concentration of 2,730 ppm; (see Appendix A). OCD was notified that this site has potential for groundwater impacts, and subsequent site investigation was then planned. A photographic chronology of these activities is provided in Appendix B.

The surface (ecological) impact of this junction box was limited, as visual observation indicated that vegetation was not affected beyond approximately 25 ft from the former junction box; (Photograph 1). However, as some potential for groundwater contamination may exist, further evaluation is warranted for petroleum hydrocarbons, the primary constituent of concern. Therefore, ROC proposes additional investigative work, as outlined below, to determine if groundwater was impacted by the former junction box.

It should be noted that the source of this impact is historical, since the former junction box has been removed. Further, baseline groundwater quality is known to be impaired in many locations due to historical practices in the Monument area

Proposed Work Elements

1. Summarize information and data collected by ROC to date.
2. Summarize additional, publicly available regional and local hydrological information.
3. Complete a vertical and lateral delineation of soil hydrocarbon concentrations (using a PID). Field methods will be verified against laboratory analysis of representative samples. Prepare graphics to illustrate the horizontal and vertical extent of contamination.
4. If warranted, install monitor wells sufficient to determine up-gradient, zone-of-release and down-gradient groundwater chloride concentrations. [All monitoring wells will be constructed (with the annular space sealed with a cement/bentonite mix) per NM Dept. Environment standards]. It should be noted, however, that the presence of

active production facilities nearby may constrain the placement of borings and monitor wells.
5. 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 protective of groundwater will be proposed to OCD. If further study indicates that this junction box site may pose a present or future risk of impacting groundwater quality, then a corrective action plan (CAP) will be developed for the protection of groundwater, and this will be proposed to OCD.

I appreciate the opportunity to work with you and your staff on this project. Please call either myself, at the number below, or Kristin Farris Pope (ROC) at 505-393-9174, 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: CDH, KFP, file

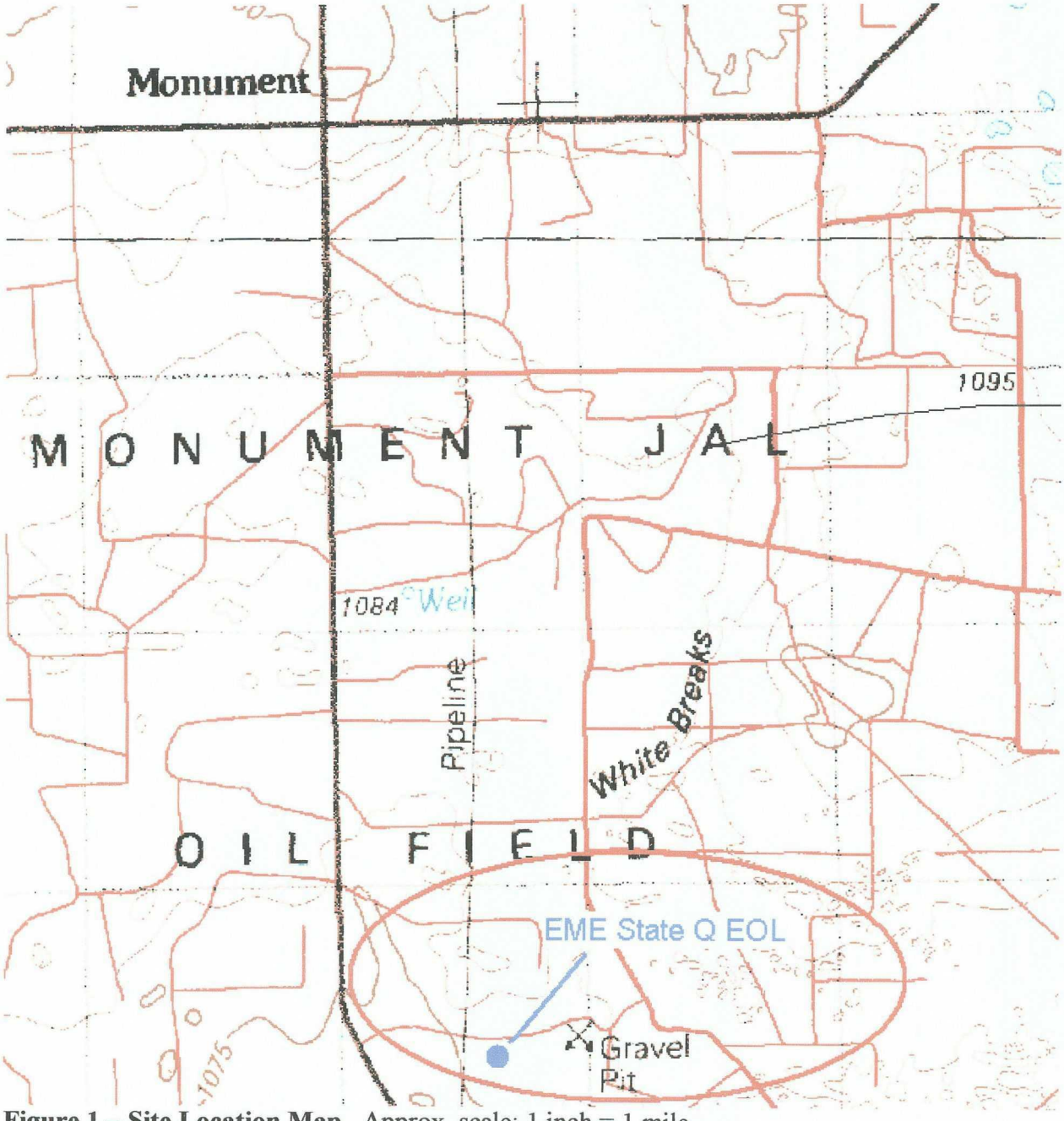


Figure 1 – Site Location Map. Approx. scale: 1 inch = 1 mile.

Appendix A – Junction Box Disclosure Report

RICE OPERATING COMPANY
JUNCTION BOX **DISCLOSURE*** REPORT

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length	Width	Depth
EME	State 'Q' EOL boot	J	16	20S	37E	Lea	12	8	6

LAND TYPE: BLM _____ STATE X FEE LANDOWNER _____ OTHER _____

Depth to Groundwater 19-50 feet NMOCD SITE ASSESSMENT RANKING SCORE: 20

Date Started 11/5/2004 Date Completed 2/28/2005 OCD Witness No

Soil Excavated 133 cubic yards Excavation Length 30 Width 10 Depth 12 feet

Soil Disposed 0 cubic yards Offsite Facility n/a Location n/a

FINAL ANALYTICAL RESULTS: **Sample Date** 11/29/2004 **Sample Depth** 12 ft

Procure 5-point composite sample of bottom and 4-point composite sample of excavation sidewalls. TPH, BTEX, and Chloride laboratory test results completed by using an approved lab and testing procedures pursuant to NMOCD guidelines.

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chlorides mg/kg
4-WALL COMP.	PID = 0.1 ppm				<10.0	<10.0	63.8
BOTTOM COMP.	0.0223	0.28	0.806	3.104	651	2730	479
BACKFILL COMP.	PID = 10.1 ppm				30.8	465	<20.0

General Description of Remedial Action:

This junction box contained a boot. This box site was delineated using a backhoe while PID screenings and chloride field tests were performed on the soil samples that were collected at regular intervals. Chloride concentrations were elevated and did not relent throughout the 30 x 10 x 12-ft-deep excavation. PID levels were also elevated. Lab results confirmed that TPH concentrations at 12 ft did not meet NMOCD guidelines. The excavation was backfilled with the excavated soil that was blended on site. An identification plate has been placed on the surface to the mark the junction box for future environmental considerations. NMOCD was notified on 6/29/2005 of potential groundwater impact at this site.

ADDITIONAL EVALUATION IS *HIGH* PRIORITY

enclosures: chloride graph, photos, lab results, PID screenings, plan-view, BTEX table

CHLORIDE FIELD TESTS

LOCATION	DEPTH (ft)	ppm
vertical at junction box	7	202
	8	289
	9	260
	10	318
	11	434
	12	405
	13	550
	14	724
	15	608
	16	724
	17	898
	18	956

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SITE SUPERVISOR Joe Gatts SIGNATURE not available COMPANY RICE Operating Company

Appendix B – Photo chronology.

Photograph 1 – Undisturbed junction box with boot.

Photograph 1 – Delineation and excavation.

Appendix B – Photo chronology (continued)

Photograph 2 – Floor of new concrete junction box.

Photograph 3 – Reseeding around new junction box.