

1R - 427-14

WORKPLANS

Date:

11-9-11

Rice Environmental Consulting & Safety

P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CERTIFIED MAIL
RETURN RECEIPT NO. 7008 1140 0001 3070 5924

November 9th, 2011

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

RE: ICP Report and CAP
Rice Operating Company – EME SWD System
EME D-2 boot (1R427-14): UL/D sec. 2 T20S R36E
(formerly the EME M-35-2 boot)

RECEIVED OOD
2011 NOV 10 PM 2:33

Mr. Hansen:

RICE Operating Company (ROC) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site in the EME Salt Water Disposal (SWD) system. The site was previously referred to as the EME M-35-2 boot at T19S R36E. However, GIS mapping shows the site to be located within unit letter D, section 2, township 20S, and range 36E (Figure 1). To reflect the geographical location of the site, the name has been changed to the EME D-2 boot at T20S R36E. All correspondence will reference EME D-2 boot.

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 Parties, who provide all operating capital on a percentage ownership/usage basis.

Background and Previous Work

The site is located approximately 4 miles south-west of Monument, New Mexico at UL/D sec. 2 T20S R36E as shown on the Geographical Location Map (Figure 1). Groundwater at the location is determined to be approximately 49 +/- feet.

In 2003, ROC initiated work on the former EME D-2 boot junction box. The site was delineated using a backhoe to form a trench and soil samples were screened at regular intervals for both hydrocarbons and chlorides. From the excavation, the bottom grab sample was taken to a commercial laboratory for analysis. Laboratory tests of the 12 ft bottom grab sample showed a chloride laboratory reading of 2,690 mg/kg and negligible GRO (gasoline range organics), DRO (diesel range organics), and BTEX readings. The trench was backfilled with the excavated soils and capped with approximately 3 feet of topsoil.

The area was contoured to the surrounding landscape and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on July 31st, 2003 and a junction box disclosure report was submitted to NMOCD with all the 2003 junction box closures and disclosures.

ROC proposed additional investigative work at the site to determine if there was potential for groundwater degradation from residual chlorides and hydrocarbons at the site.

ICP Investigative Results

As part of the Investigation and Characterization Plan approved by NMOCD on September 13th, 2011, eight soil bores were advanced through the former junction box site on August 29th and 31st, 2011. (Figure 2). ROC personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID) for hydrocarbons. Representative samples from the bores were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers (Appendix A). Laboratory readings showed chloride numbers increasing with depth at the source bore, SB-1. In all the other bores, laboratory chloride readings decreased with depth. Laboratory GRO and DRO readings were low to non-detect in all the soil bores except for SB-4 at 5 ft bgs. In SB-4 at 5 ft bgs, the laboratory GRO reading was 67.2 mg/kg and the DRO reading was 556 mg/kg. Because the field sample for SB-4 at 5 ft bgs had a PID reading above 100 ppm, the sample was also submitted for BTEX analysis. The sample returned with a laboratory benzene reading of non-detect, a toluene reading of 0.153 mg/kg, an ethyl-benzene reading of 0.495 mg/kg and a xylene reading of 1.58 mg/kg.

On October 27th and 28th, 2011, two monitor wells and two additional soil bores were installed at the site. MW-1 is located 50 ft southeast of the former junction box and MW-2 is located 163 ft northwest of the former junction box site. As MW-2 was being installed, RECS personnel field tested the soil for chlorides and screened in the field with PID meter for hydrocarbons to determine background soil concentrations. As SB-9 and SB-10 were being advanced, RECS personnel field tested the soil for chlorides and screened in the field with a PID meter for hydrocarbons. Representative samples from the bores were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers. In SB-9, chloride numbers peaked at 10 ft bgs with a laboratory chloride reading of 2,240 mg/kg and decreased to 304 mg/kg at 45 ft bgs. In SB-10, chloride numbers peaked at 30 ft bgs with a laboratory chloride reading of 1,100 mg/kg and decreased to 304 mg/kg at 45 ft bgs. In both soil bores, GRO and DRO readings were non-detect.

Recommendations

Corrective Action Plan to the Vadose Zone

RECS recommends that ROC install a 20-mil reinforced poly liner at the site measuring 51 ft x 62 ft (Figure 2). The liner will act as an infiltration barrier that will inhibit the downward migration of chlorides to groundwater. The liner will be installed at 5 – 4 ft bgs and padded both above and below with six inches of blow sand to prevent liner punctures. The soils placed on top of the padded liner will have a laboratory chloride reading below 500 mg/kg and a PID reading below 100 ppm. Excavated soil will be evaluated for use as backfill and any soil requiring disposal will be properly disposed of at a NMOCD approved facility.

Finally, the site will be seeded. The surface soils over and surrounding the site will be prepared with soil amendments as needed and then seeded with a native vegetative mix. Vegetation above the liner will also provide a natural infiltration barrier for the site since plants capture water through their roots thereby reducing the volume of water moving through the vadose zone to groundwater.

Further Groundwater Delineation

Groundwater samples will be obtained from the newly installed monitoring wells (MW-1 and MW-2) and analyzed on a quarterly basis. Once it is determined whether chloride impact has occurred to groundwater beneath the site, ROC will either suggest a groundwater remedy or request site termination.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-9174 or me if you have any questions or wish to discuss the site.

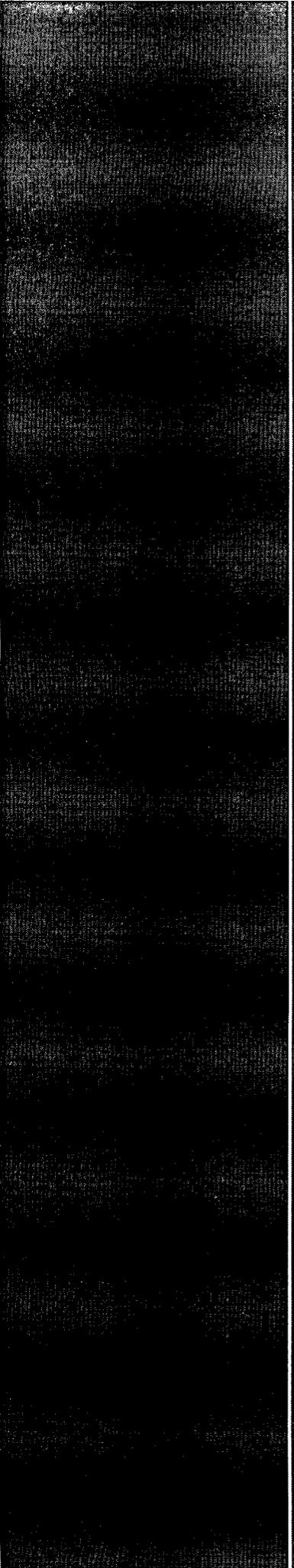
Sincerely,



Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:

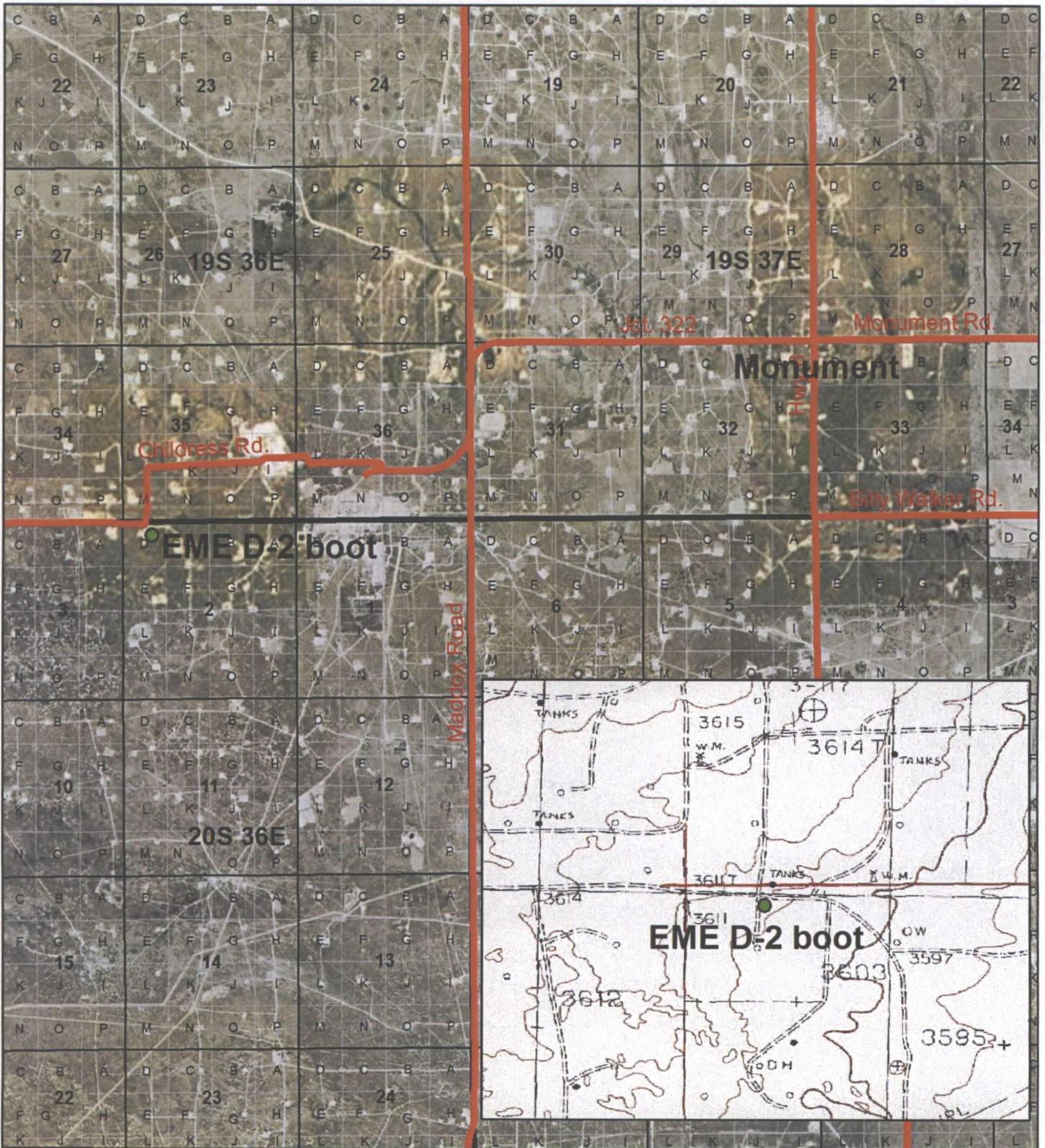
- Figure 1 – Geographical Location Map
- Figure 2 – Proposed Liner Map
- Appendix A – ICP soil bore and MW logs and laboratory confirmation



Figures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Geographical Location Map

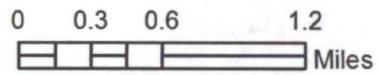


EME D-2 boot

LEGALS: UL/D sec. 2
T20S R36E

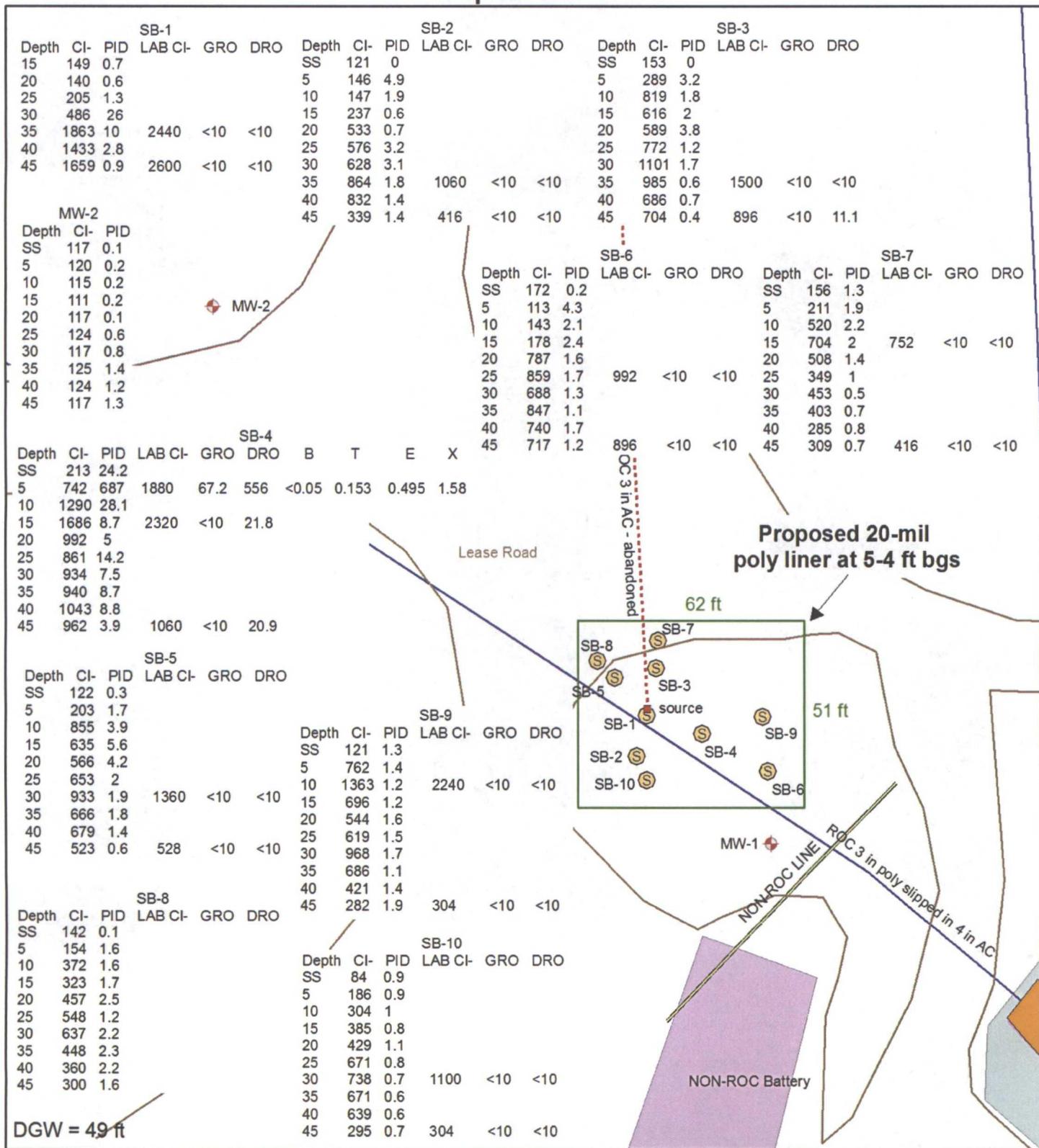
Case#: 1R427-14

Figure 1



Drawing date: 8-3-11
Drafted by: L. Weinheimer

Proposed Liner

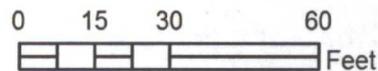


EME D-2 boot

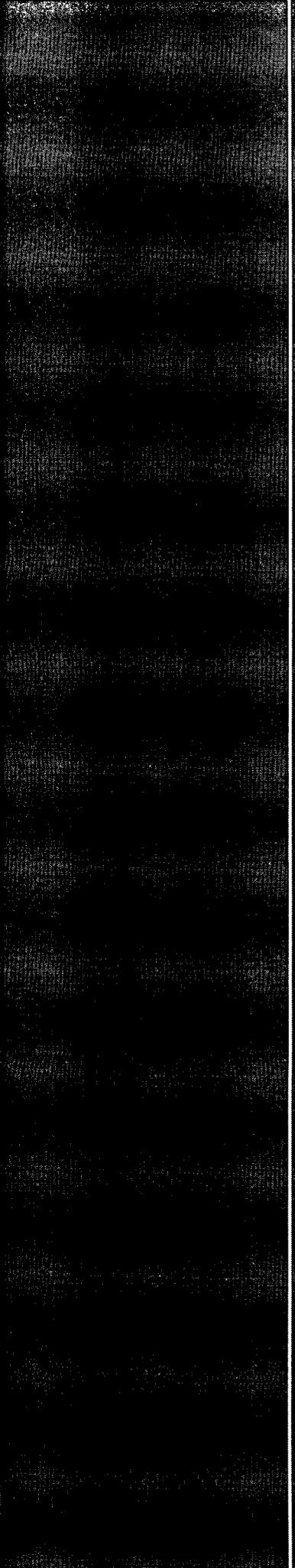
LEGALS: UL/D sec. 2
T20S R36E

Case#: 1R427-14

Figure 2



Drawing date: 11-4-11
Drafted by: L. Weinheimer

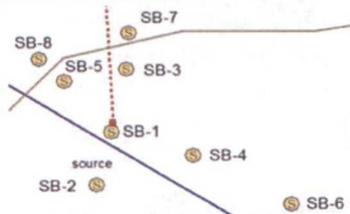


Appendix A

ICP soil bore and MW logs and laboratory confirmation

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Logger: Kyle Norman
Driller: Harrison & Cooper, Inc.
Drilling Method: Air rotary
Start Date: 8/29/2011
End Date: 8/29/2011



Project Name: EME D-2 boot
Well ID: SB-2
Project Consultant: RECS

Comments: All samples were from cuttings. Located 13 ft south of the former junction box site.

Location: UL/D sec. 2 T20S R36E

DRAFTED BY: L. Weinheimer
 TD = 45 ft GW = 49 ft

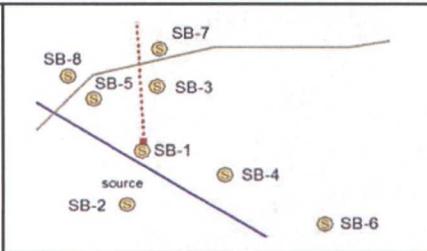
Lat: 32°36'32.578"N **County:** Lea
Long: 103°19'51.909"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown sand		
SS	121		0.0			
				Sandy Red Clay		
5 ft	146		4.9			
				Sandy Tan Clay		
10 ft	147		1.9			
				Sandy Tan Reddish Clay		
15 ft	237		0.6			
				Sandy Red Clay		
20 ft	533		0.7			
				Sandy Tan Reddish Clay		
25 ft	576		3.2			bentonite seal
30 ft	628		3.1			
35 ft	864	Cl-1060 GRO <10 DRO <10	1.8			
40 ft	832		1.4			
				Sandy Red Clay		
45 ft	339	Cl-416 GRO <10 DRO <10	1.4			

Logger:	Kyle Norman			
Driller:	Harrison & Cooper, Inc.			
Drilling Method:	Air rotary		Project Name: EME D-2 boot	Well ID: SB-3
Start Date:	8/31/2011		Project Consultant: RECS	
End Date:	8/31/2011	Location: UL/D sec. 2 T20S R36E		
Comments: All samples were from cuttings. Located 11 ft north of the former junction box site.		Lat: 32°36'32.813"N		County: Lea
DRAFTED BY: L. Weinheimer		Long: 103°19'51.843"W		State: NM
TD = 45 ft		GW = 49 ft		

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	153		0	Sandy Red Clay		
5 ft	289		3.2	Sandy Tan Clay		
10 ft	819		1.8	Sandy Red Clay		
15 ft	616		2	Sandy Tan Clay		
20 ft	589		3.8	Sandy Tan Clay		bentonite seal
25 ft	772		1.2	Sandy Tan Clay		
30 ft	1,101		1.7	Sandy Tan Clay		
35 ft	985	Cl-1500	0.6	Sandy Tan Reddish Clay		
		GRO <10				
		DRO <10				
40 ft	686		0.7	Sandy Red Clay		
45 ft	704	Cl-896	0.4	Sandy Red Clay		
		GRO <10				
		DRO 11.1				

Logger: Kyle Norman
Driller: Harrison & Cooper, Inc.
Drilling Method: Air rotary
Start Date: 8/31/2011
End Date: 8/31/2011



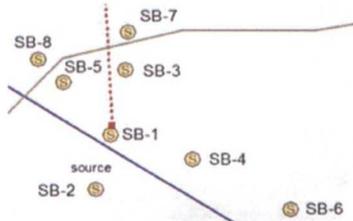
Project Name: EME D-2 boot
Well ID: SB-4
Project Consultant: RECS

Comments: All samples were from cuttings. Located 16 ft ESE of the former junction box site.
DRAFTED BY: L. Weinheimer
 TD = 45 ft GW = 49 ft

Location: UL/D sec. 2 T20S R36E
Lat: 32°36'32.635"N **County:** Lea
Long: 103°19'51.698"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Sandy Red Clay		
SS	213		24.2			
				Black Oily Sand Hydrocarbon Odor		
5 ft	742	Cl-1880	687			
	B <0.05 T 0.153	GRO 67.2		Tan to Gray Hydrocarbon Odor		
	E 0.495 X 1.58	DRO 556				
10 ft	1290		28.1			
				Sandy Red Clay Hydrocarbon Odor		
15 ft	1686	Cl-2320	8.7			
		GRO <10		Sandy Red Clay Slight Hydrocarbon Odor		
		DRO 21.8				
20 ft	992		5			
25 ft	861		14.2			
30 ft	934		7.5			
35 ft	940		8.7	Sandy Red Clay		
40 ft	1043		8.8			
45 ft	962	Cl-1060	3.9			
		GRO <10				
		DRO 20.9				

Logger: Kyle Norman
Driller: Harrison & Cooper, Inc.
Drilling Method: Air rotary
Start Date: 8/31/2011
End Date: 8/31/2011



Project Name: EME D-2 boot
Well ID: SB-8
Project Consultant: RECS
Location: UL/D sec. 2 T20S R36E
Lat: 32°36'32.835"N
County: Lea
Long: 103°19'52.034"W
State: NM

Comments: All samples were from cuttings. Located 19 ft north west of the former junction box site.
DRAFTED BY: L. Weinheimer
 TD = 45 ft GW = 49 ft

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Sandy Red Clay		
SS	142		0.1			
				Sandy Tan Reddish Clay		
5 ft	154		1.6			
				Tan Sand with Some Caliche		
10 ft	372		1.6			
15 ft	323		1.7			
				Sandy Red Clay		
20 ft	457		2.5			
				Sandy Tan Clay		
25 ft	548		1.2			
30 ft	637	Cl-1120	2.2			
		GRO <10				
		DRO <10				
35 ft	448		2.3			
40 ft	360		2.2	Sandy Red Clay		
45 ft	300	Cl-336	1.6			
		GRO <10				
		DRO <10				

Logger:	Kyle Norman		
Driller:	Harrison & Cooper, Inc.		
Drilling Method:	Air rotary		
Start Date:	10/27/2011		
End Date:	10/27/2011		

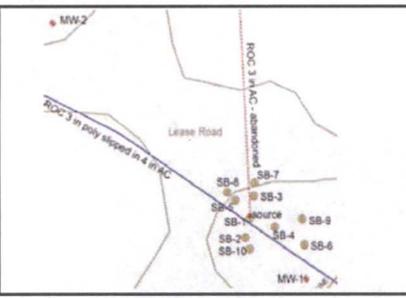
Project Name:	EME D-2 boot	Well ID:	SB-9
Project Consultant: RECS		Location: UL/D sec. 2 T20S R36E	
Comments: SB-9 is located 32 ft east of the former junction box site. All samples were from cuttings.		Lat: 32°36'32.681"N	County: Lea
DRAFTED BY: L. Weinheimer		Long: 103°19'51.5"W	State: NM
TD = 45 ft		GW = 49 ft	

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown Sand		
SS	121		1.3			
				Red Sand With Some Caliche		
5 ft	762		1.4			
				Tan Sand With Some Caliche		
10 ft	1363	CI-2240	1.2			
		GRO <10				
		DRO <10				
15 ft	696		1.2			
20 ft	544		1.6			
				Red Sand With Some Caliche		
25 ft	619		1.5			
30 ft	968		1.7			
35 ft	686		1.1			

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Red Sand With Some Caliche		
40 ft	421		1.4			
45 ft	282	Cl-304	1.9			
		GRO <10				
		DRO <10				

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Red Sand		
40 ft	639		0.6			
45 ft	295	Cl-304	0.7			
		GRO <10				
		DRO <10				

Logger: Kyle Norman
Driller: Harrison & Cooper, Inc.
Drilling Method: Air rotary
Start Date: 10/27/2011
End Date: 10/27/2011



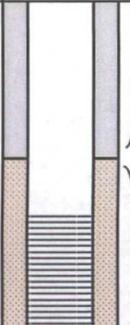
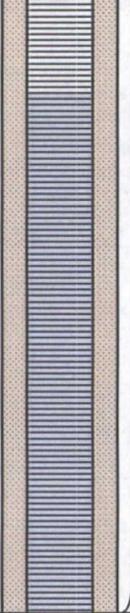
Project Name: EME D-2 boot
Well ID: MW-1
Project Consultant: RECS

Comments: MW-1 is located 50 ft southeast of the former junction box site. No samples were taken.
 DRAFTED BY: L. Weinheimer
 TD = 92 ft GW = 49 ft

Location: UL/D sec. 2 T20S R36E
Lat: 32°36'32.336"N **County:** Lea
Long: 103°19'51.474"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS				NO SAMPLES TAKEN		<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">4 in PVC</div> <div style="margin-left: 20px;"> </div> </div>
5 ft						
10 ft						
15 ft						
20 ft						
25 ft						
30 ft						
35 ft						
40 ft						
45 ft						
50 ft						
55 ft						
60 ft						

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
65 ft				NO SAMPLES TAKEN		 <p>sand pack</p>
70 ft						
75 ft						
80 ft						
85 ft						
90 ft						
92 ft						

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Red Sand		
40 ft	124		1.2			
45 ft	117		1.3			
				NO SAMPLES TAKEN		
50 ft						
55 ft						
60 ft						
62 ft						

sand
pack

September 02, 2011

Hack Conder
Rice Operating Company
112 W. Taylor
Hobbs, NM 88240

RE: EME D-2 BOOT (20/36)

Enclosed are the results of analyses for samples received by the laboratory on 08/30/11 8:05.

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 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/30/2011	Sampling Date:	08/29/2011
Reported:	09/02/2011	Sampling Type:	Soil
Project Name:	EME D-2 BOOT (20/36)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE #1 @ 35' (H101831-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2440	16.0	08/31/2011	ND	416	104	400	3.77		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/01/2011	ND	163	81.5	200	1.53		
DRO >C10-C28	<10.0	10.0	09/01/2011	ND	161	80.3	200	2.07		
<i>Surrogate: 1-Chlorooctane</i>	<i>98.9 %</i>	<i>55.5-154</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>107 %</i>	<i>57.6-158</i>								

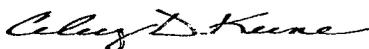
Sample ID: SOIL BORE #1 @ 45' (H101831-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2600	16.0	08/31/2011	ND	416	104	400	3.77		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/01/2011	ND	163	81.5	200	1.53		
DRO >C10-C28	<10.0	10.0	09/01/2011	ND	161	80.3	200	2.07		
<i>Surrogate: 1-Chlorooctane</i>	<i>94.3 %</i>	<i>55.5-154</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>106 %</i>	<i>57.6-158</i>								

Cardinal Laboratories

* = Accredited Analyte

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 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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/30/2011	Sampling Date:	08/29/2011
Reported:	09/02/2011	Sampling Type:	Soil
Project Name:	EME D-2 BOOT (20/36)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE #2 @ 35' (H101831-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1060	16.0	08/31/2011	ND	416	104	400	3.77		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/01/2011	ND	163	81.5	200	1.53		
DRO >C10-C28	<10.0	10.0	09/01/2011	ND	161	80.3	200	2.07		

Surrogate: 1-Chlorooctane 97.9 % 55.5-154
 Surrogate: 1-Chlorooctadecane 108 % 57.6-158

Sample ID: SOIL BORE #2 @ 45' (H101831-04)

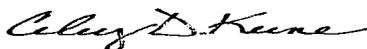
Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	416	16.0	08/31/2011	ND	416	104	400	3.77		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/02/2011	ND	172	86.1	200	1.25		
DRO >C10-C28	<10.0	10.0	09/02/2011	ND	181	90.6	200	3.69		

Surrogate: 1-Chlorooctane 99.5 % 55.5-154
 Surrogate: 1-Chlorooctadecane 109 % 57.6-158

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

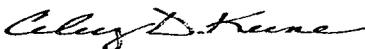
Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL 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		P.O. #:		ANALYSIS REQUEST	
Project Manager: Hack Conder		Company:		Chlorides	
Address:		Attn:		TPH 8015 M	
City:		Address:		BTEX	
Phone #:		City:		Texas TPH	
Project #:		State:		Complete Cations/Anions	
Project Name:		Phone #:		TDS	
Project Location: FME D-2 Beet 20-36		Fax #:			
Sampler Name: Kyle Norman					

Lab I.D.	Sample I.D.	# CONTAINERS	MATRIX	PRESERV			SAMPLING		
				ACID/BASE	ICE/COOL	OTHER	DATE	TIME	
HID1831	Soil Bore #1 @ 35'	6	SOIL	✓	✓		8-29-11	10:00	✓
	Soil Bore #1 @ 45'	6	SOIL	✓	✓		8-29-11	10:10	✓
	Soil Bore #2 @ 35'	6	SOIL	✓	✓		8-29-11	10:40	✓
	Soil Bore #2 @ 45'	6	SOIL	✓	✓		8-29-11	10:45	✓

BILL TO

FOR LAB USE ONLY

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Relinquished By: Kyle Norman
 Date: 8-30-11
 Time: 7:15

Received By: Kyle Norman
 Date: 8-30-11
 Time: 7:15

Delivered By: (Circle One)
 Sampler: UPS - Bus - Other: #26

Sample Condition:
 Cool Intact (Initials)
 Yes No

Checked By: [Signature]

Remarks:
 email results
 kconder@riceswd.com
 Zconder@rice-ecs.com; Bbaker@riceswd.com
 hconder@riceswd.com; Lweinheimer@riceswd.com

Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:

September 09, 2011

Hack Conder
Rice Operating Company
112 W. Taylor
Hobbs, NM 88240

RE: D-2 BOOT EME (20/37)

Enclosed are the results of analyses for samples received by the laboratory on 08/31/11 16:12.

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 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/31/2011	Sampling Date:	08/31/2011
Reported:	09/09/2011	Sampling Type:	Soil
Project Name:	D-2 BOOT EME (20/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE #3 @ 35' (H101855-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1500	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	179	89.3	200	0.599		
DRO >C10-C28	<10.0	10.0	09/04/2011	ND	168	84.1	200	6.80		

Surrogate: 1-Chlorooctane 106 % 55.5-154
 Surrogate: 1-Chlorooctadecane 108 % 57.6-158

Sample ID: SOIL BORE #3 @ 45' (H101855-02)

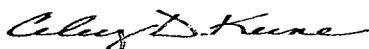
Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	896	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	179	89.3	200	0.599		
DRO >C10-C28	11.1	10.0	09/04/2011	ND	168	84.1	200	6.80		

Surrogate: 1-Chlorooctane 103 % 55.5-154
 Surrogate: 1-Chlorooctadecane 103 % 57.6-158

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/31/2011	Sampling Date:	08/31/2011
Reported:	09/09/2011	Sampling Type:	Soil
Project Name:	D-2 BOOT EME (20/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE #4 @ 5' (H101855-03)

BTEX 8021B		mg/kg		Analyzed By: CMS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/02/2011	ND	2.11	106	2.00	10.0		
Toluene*	0.153	0.050	09/02/2011	ND	2.03	101	2.00	8.54		
Ethylbenzene*	0.495	0.050	09/02/2011	ND	2.02	101	2.00	6.29		
Total Xylenes*	1.58	0.150	09/02/2011	ND	6.03	100	6.00	5.93		

Surrogate: 4-Bromofluorobenzene (PIL) 161 % 64.4-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1880	16.0	09/01/2011	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	67.2	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	556	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane 109 % 55.5-154

Surrogate: 1-Chlorooctadecane 106 % 57.6-158

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Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/31/2011	Sampling Date:	08/31/2011
Reported:	09/09/2011	Sampling Type:	Soil
Project Name:	D-2 BOOT EME (20/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE #4 @ 15' (H101855-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2320	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	21.8	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane 105 % 55.5-154
 Surrogate: 1-Chlorooctadecane 109 % 57.6-158

Sample ID: SOIL BORE #4 @ 45' (H101855-05)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1060	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	20.9	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane 137 % 55.5-154
 Surrogate: 1-Chlorooctadecane 139 % 57.6-158

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Analytical Results For:

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 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/31/2011	Sampling Date:	08/31/2011
Reported:	09/09/2011	Sampling Type:	Soil
Project Name:	D-2 BOOT EME (20/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE #5 @ 30' (H101855-06)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1360	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	<10.0	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane 107 % 55.5-154
 Surrogate: 1-Chlorooctadecane 110 % 57.6-158

Sample ID: SOIL BORE #5 @ 45' (H101855-07)

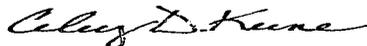
Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	528	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	<10.0	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane 121 % 55.5-154
 Surrogate: 1-Chlorooctadecane 127 % 57.6-158

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/31/2011	Sampling Date:	08/31/2011
Reported:	09/09/2011	Sampling Type:	Soil
Project Name:	D-2 BOOT EME (20/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE #6 @ 25' (H101855-08)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	992	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	<10.0	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane	108 %	55.5-154
Surrogate: 1-Chlorooctadecane	110 %	57.6-158

Sample ID: SOIL BORE #6 @ 45' (H101855-09)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	896	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	<10.0	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane	105 %	55.5-154
Surrogate: 1-Chlorooctadecane	107 %	57.6-158

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/31/2011	Sampling Date:	08/31/2011
Reported:	09/09/2011	Sampling Type:	Soil
Project Name:	D-2 BOOT EME (20/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE #7 @ 15' (H101855-10)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	752	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	<10.0	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane 109 % 55.5-154

Surrogate: 1-Chlorooctadecane 111 % 57.6-158

Sample ID: SOIL BORE #7 @ 45' (H101855-11)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	416	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	<10.0	10.0	09/04/2011	ND	177	88.3	200	0.760		

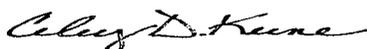
Surrogate: 1-Chlorooctane 130 % 55.5-154

Surrogate: 1-Chlorooctadecane 133 % 57.6-158

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/31/2011	Sampling Date:	08/31/2011
Reported:	09/09/2011	Sampling Type:	Soil
Project Name:	D-2 BOOT EME (20/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE #8 @ 30' (H101855-12)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1120	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	<10.0	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane 109 % 55.5-154

Surrogate: 1-Chlorooctadecane 111 % 57.6-158

Sample ID: SOIL BORE #8 @ 45' (H101855-13)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	09/01/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/04/2011	ND	174	87.2	200	0.657		
DRO >C10-C28	<10.0	10.0	09/04/2011	ND	177	88.3	200	0.760		

Surrogate: 1-Chlorooctane 114 % 55.5-154

Surrogate: 1-Chlorooctadecane 116 % 57.6-158

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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

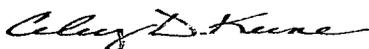
Notes and Definitions

- A-01 Surrogate failed high due to objective matrix interference.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1 of 2

CARDINAL 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: Bees Rice 9/8/11 ck **BILL TO** ANALYSIS REQUEST

Project Manager: Hack Conder P.O. #:

Address: _____ Company: _____

City: Hobbs State: NM Zip: 88240 Attn: _____

Phone #: _____ Fax #: _____ Address: _____

Project #: _____ Project Owner: _____ City: _____

Project Name: _____ State: _____ Zip: _____

Project Location: D-2 Boot EME 20-37 Phone #: _____

Sampler Name: Kyle Norman Fax #: _____

Lab I.D.	Sample I.D.	FOR LAB USE ONLY			PRESERV		SAMPLING		DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS
		(G) RAB OR (C) OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	MATRIX	ACID/BASE	ICE / COOL								
H101855																
1	Soil Bore #3 @ 35'	5	1						8-31-11	8:00	✓					
2	Soil Bore #3 @ 45'	6	1						8-31-11	8:10	✓					
3	Soil Bore #4 @ 5'	9	1						8-31-11	8:45	✓		✓			
4	Soil Bore #4 @ 15'	9	1						8-31-11	8:50	✓		✓			
5	Soil Bore #4 @ 45'	5	1						8-31-11	8:55	✓		✓			
6	Soil Bore #5 @ 30'	6	1						8-31-11	9:30	✓		✓			
7	Soil Bore #5 @ 45'	5	1						8-31-11	9:40	✓		✓			
8	Soil Bore #6 @ 25'	5	1						8-31-11	1:10	✓		✓			
9	Soil Bore #6 @ 45'	9	1						8-31-11	11:20	✓		✓			
10	Soil Bore #7 @ 15'	5	1						8-31-11	11:45	✓		✓			

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 interruption, 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: Kyle Norman Date: 8-31-11 Time: 4:12

Received By: Adri Henson Date: _____ Time: _____

Relinquished By: _____ Date: _____ Time: _____

Received By: _____ Date: _____ Time: _____

Delivered By: (Circle One) _____

Sampler - UPS - Bus - Other: _____

Sample Condition: Cool Intact (Initials) AA

Checked By: _____

Phone Result: Yes No Add'l Phone #: _____

Fax Result: Yes No Add'l Fax #: _____

REMARKS: email results
 Knorman@rice-ecs.com
 Kjones@riceswd.com; Bbaker@rice-ecs.com;
 hconder@rice-ecs.com; Lweinheimer@rice-ecs.com
 zconder@rice-ecs.com

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

#26

October 31, 2011

Hack Conder
Rice Operating Company
112 W. Taylor
Hobbs, NM 88240

RE: EME D-2 BOOT (20/36)

Enclosed are the results of analyses for samples received by the laboratory on 10/28/11 7:55.

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 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	10/28/2011	Sampling Date:	10/27/2011
Reported:	10/31/2011	Sampling Type:	Soil
Project Name:	EME D-2 BOOT (20/36)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB-9 @ 10' (H102337-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2240	16.0	10/28/2011	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/29/2011	ND	178	89.0	200	3.30		
DRO >C10-C28	<10.0	10.0	10/29/2011	ND	193	96.3	200	2.49		

<i>Surrogate: 1-Chlorooctane</i>	82.9 %	55.5-154
<i>Surrogate: 1-Chlorooctadecane</i>	95.1 %	57.6-158

Sample ID: SB-9 @ 45' (H102337-02)

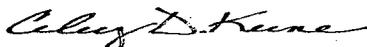
Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	304	16.0	10/28/2011	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/29/2011	ND	178	89.0	200	3.30		
DRO >C10-C28	<10.0	10.0	10/29/2011	ND	193	96.3	200	2.49		

<i>Surrogate: 1-Chlorooctane</i>	75.3 %	55.5-154
<i>Surrogate: 1-Chlorooctadecane</i>	101 %	57.6-158

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

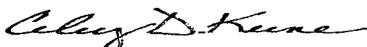
Notes and Definitions

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- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
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Celey D. Keene, Lab Director/Quality Manager

November 02, 2011

Hack Conder
Rice Operating Company
112 W. Taylor
Hobbs, NM 88240

RE: EME D-2 BOOT (20/36)

Enclosed are the results of analyses for samples received by the laboratory on 10/28/11 13:12.

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.

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Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V2, V3)

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This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 Hack Conder
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	10/28/2011	Sampling Date:	10/28/2011
Reported:	11/02/2011	Sampling Type:	Soil
Project Name:	EME D-2 BOOT (20/36)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB-10 @ 30' (H102346-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1100	16.0	11/01/2011	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	11/01/2011	ND	157	78.4	200	3.93		
DRO >C10-C28	<10.0	10.0	11/01/2011	ND	181	90.6	200	4.73		

Surrogate: 1-Chlorooctane 83.9 % 55.5-154
 Surrogate: 1-Chlorooctadecane 105 % 57.6-158

Sample ID: SB-10 @ 45' (H102346-02)

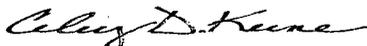
Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	304	16.0	11/01/2011	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	11/01/2011	ND	157	78.4	200	3.93		
DRO >C10-C28	<10.0	10.0	11/01/2011	ND	181	90.6	200	4.73		

Surrogate: 1-Chlorooctane 84.3 % 55.5-154
 Surrogate: 1-Chlorooctadecane 97.8 % 57.6-158

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

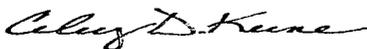
Notes and Definitions

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- RPD Relative Percent Difference
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- *** Insufficient time to reach temperature.
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Celey D. Keene, Lab Director/Quality Manager

