1R-427-179

## REPORTS

# DATE:



### Rice Environmental Consulting & Safety

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

RECEIVED OCD

CERTIFIED MAIL RETURN RECIEPT NO. 7008 1140 0001 3070 5917

September 20<sup>th</sup>, 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 Termination Request Rice Operating Company – EME SWD System EME B-21 boot (1R427-179): UL/B sec. 21 T20S R37E (formerly the EME Gilluly 'B' boot site)

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. 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/usage basis.

The site was previously referred to as the EME Gilluly 'B' boot. However, the site name has been changed to the EME B-21 boot to match its geographical location. All correspondence will reference EME B-21 boot.

### **Background and Previous Work**

The site is located approximately 3 miles south of Monument, New Mexico at UL/B, Sec. 21, T20S, R37E as shown on the Site Location Map (Figure 1). Groundwater at this site was determined to be 51 +/- feet.

In 2004, ROC initiated work on the former EME B-21 boot junction box prior to it being replaced by a new, watertight junction box at the site. The site was delineated using a backhoe and soil samples were screened at regular intervals for both hydrocarbons and chlorides (Figure 2). The excavation reached dimensions of  $10 \times 10 \times 12$  feet bgs where composite samples were collected for laboratory verification. Laboratory tests of the site showed evidence of gasoline range organics (GRO) measuring 408 mg/kg in the backfill, <10.0 mg/kg in the 4-wall composite, and 292 mg/kg for the bottom composite. Diesel range organics (DRO) measured 5,380 mg/kg in the backfill, 351 mg/kg in the 4-wall composite, and 2,940 mg/kg on the bottom composite. Chlorides at the site were

negligible. The soils were blended on site and then backfilled into the excavation. 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 June 6, 2005 and a junction box disclosure report was submitted to NMOCD with all the 2005 junction box closures and disclosures.

### **ICP Investigative Results**

As part of the Investigation and Characterization Plan (ICP) approved by NMOCD on September 15<sup>th</sup>, 2010, ROC advanced two soil bores through the former junction box site on October 21<sup>st</sup>, 2010 (Figure 2). ROC personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID) for hydrocarbons. Chloride and PID measurement were low throughout SB-1 and SB-2. Representative samples from the bores were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers (Appendix A). SB-1 at 20 ft bgs had a laboratory chloride reading of 64 mg/kg, GRO and BTEX readings of non-detect, and a DRO reading of 838 mg/kg. SB-1 at 40 ft bgs had a laboratory chloride reading of 352 mg/kg, and GRO, DRO and BTEX readings of non-detect. SB-2 at 5 ft bgs had laboratory chloride, GRO, DRO and BTEX readings of non-detect. SB-2 at 40 ft bgs had a laboratory chloride reading of 368 mg/kg and GRO and DRO readings of non-detect. Benzene, ethylbenzene, and xylene readings were also non-detect, and toluene was relatively low with a reading of 0.077 mg/kg. The site is located next to a lease road and adjacent to a non-ROC abandoned facility. In addition, there is a non-ROC active facility across the lease road.

### **Conclusions and Recommendations**

Site investigation and characterization activities proved chlorides were not a constituent of concern at this site. TPH and BTEX were present but in low concentrations. The site has a natural clay layer from 20 ft bgs to approximately 40 ft bgs. Clay has a low permeability, which greatly reduces the transportability of water and constituents through the vadose zone. A natural clay layer of an approximate thickness of 20 feet provides an infiltration barrier that will stop the downward migration of residual constituents to groundwater.

As observed in the site photos (Appendix B), the site has returned to normal vegetative capacity. Since the soil investigation showed low levels of chlorides and hydrocarbons and the site has returned to normal vegetative capacity, RECS requests 'remediation termination' status of the regulatory file.

ROC 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,

JCWA  $\supset$ 

Lara Weinheimer Project Scientist RECS (575) 441-0431

Attachments:

Figure 1 – Site location map Figure 2 – Soil bore information map Appendix A – Soil bore installation and laboratory confirmation Appendix B – Site photos



## Figures

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

K	23	1	L	K 2	J	1	E L	K	J	7	E L	r K 2	J. 0	H J	E L	F K 2	J	H	_L <sup>V</sup>	к 2	2	T	L	к 2	J	1
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p c	в	A	D	c	в	A	D	c	В	A	D	c	в	A	D	С	В	A	D	С	В	A	D	C	В	1
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N N	0	P	М	N	0	PA	M	N	0	P	м	N	0	P	М	N	0	P	M	N	0 -	P	М	N	0	P
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LK	1	1	L	ĸ	J	41	L	к	J	1		к	14	V	D	K	J	1	L	К	J	V	L	ĸ	2	1
MN	C	P	М	N	0	P	M	N	0	P	M	N	10	P	M	N	0	P	M	N	0	P	М	N	0	P
DO	E	A	D	c	В	A	D	C	В	A	D	c	В	A	D	C	В	A	D	C	B	A	D	C	В	A
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LH		4	14	K	1		LL.	K	1	P.	4	K	1	1	- 5	K	3	A	L	K	L	T	1	K	J	1



### EME B-21 boot

Legals: UL/B sec. 21 T20S R37E

Case #: 1R427-179

Figure 1 0 0.25 0.5 1 Miles Drawing date:11-15-10 Drafted by: L. Weinheimer

### Junction box and soil bore information



### Appendix A Soil bore installation 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: Driller:	ogger: Jordan Woodfin riller: Harrison & Cooper, Inc.			SB-1 SB-2	R	ECS	e
Drilling Method: Start Date: End Date:		Air rotar 10/21/20 10/21/20	ry 10 10		Project Name: EME B-21 I Project Consult	boot ant: RECS	Well ID: SB-1
Comme	ents: Loca TD =	ted at the s All samples DRAFTE 40 ft	ource o s from s D BY: L	f the former junction box site. split spoon sampling ARA WEINHEIMER GW = 51 ft	Location: UL/B Lat: 32°33'44 Long: 103°15'10	sec. 21 T2 .293"N 0.003" W	20S R37E County: LEA State: NM
Depth (feet)	chlorid field tes	ts LAB	PID	Description	Lithology	Well	Construction
	an a			Tannish green with some black fine			
20 ft	237	CI- 64	18.2	Sand. Moise			
B <0	0.1 T <0.1	GRO <0.1 <50 DRO					
E <0	0.1 X <0.3	838		Red clay. Moist			
25 ft	140		2.1				
	2.30			Red clay			bentonite
30 ft	184		0.0				seal
<u>90,03</u> 75,00		1		Purple clav			
35 ft	186		0.0				
40 ft 20		CI- 08 352 0.0					
B <0	0.1 T <0.1	GRO <10					

Logger: Driller: H Drilling Method: Start Date: End Date:		Jordan Woo arrison & Coop	odfin per, Inc.	SB-1 SB-2		and	REC.	MTAL 5
		Air rotan 10/21/201 10/21/201	y 10 10		Project Name: Well ID: EME B-21 boot SB-2 Project Consultant: RECS			
Comme	nts: Locat TD =	ed 9 ft sout All samples DRAFTEI 40 ft	h west from s D BY: L	of the former junction box site. split spoon sampling ARA WEINHEIMER GW = 51 ft	Lo La Lo	cation: UL/B s t: 32°33'44.253 ng: 103°15'10.	ec. 21 T "N 091"W	20S R37E County: LEA State: NM
Depth (feet)	chloride field test	e LAB	PID	Description		Lithology	Well	Construction
5 ft	292	CI- <16	0.5	Brown fine sand. Moist				
B <0 E <0	0.1 T <0.1 0.1 X <0.3	GRO <10 DRO <10		Tan to brown very fine sand. Moist				
10 ft	232		0.8					
15 ft	171		0.5	White caliche mixed with fine sand				
20 ft	196		0.6	Red fine sand with traces of red clay				
			0.0	Red clay				bentonite seal
25 ft	167		0.4					1 Sec.
30 ft	295		0.6	Red clay with pieces of white clay				
				Purple clay				
35 ft	303		0.0					
40 ft	271	CI- 368	0.1	Purple /rust clay				
B <0.0	05 T 0.077	GRO <10 DRO						

November 01, 2010

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

RE: EME B-21 BOOT

Enclosed are the results of analyses for samples received by the laboratory on 10/22/10 7:58.

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 Hydorcarbons

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

Cardinal Laboratories is accreditated 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.Kune

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:	10/22/2010	Sampling Date:	10/21/2010
Reported:	11/01/2010	Sampling Type:	Soil
Project Name:	EME B-21 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EME B-21 BOOT		· · ·

#### Sample ID: SB #1 @ 20' (H021120-01)

BTEX 8260B	mg/	kg	Analyze	d By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	10/27/2010	ND	1.00	100	1.00		
Toluene*	<0.100	0.100	10/27/2010	ND	0.970	97.0	1.00		
Ethylbenzene*	<0.100	0.100	10/27/2010	ND	1.04	104	1.00		
Total Xylenes*	<0.300	0.300	10/27/2010	ND	3.09	103	3.00		
Surrogate: Dibromofluoromethane	90.4	% 80-120	0 1100 00						
Surrogate: Toluene-d8	87.3	% 80-120							
Surrogate: 4-Bromofluorobenzene	100 9	% 80-120							
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/22/2010	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: AB					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	10/22/2010	ND	211	105	200	6.63	
DRO >C10-C28	838	50.0	10/22/2010	ND	180	90.2	200	5.39	
Surrogate: 1-Chlorooctane	21.9	% 70-130							
Surrogate: 1-Chlorooctadecane	21.0	% 70-130							

#### **Cardinal Laboratories**

\*=Accredited Analyte

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Celey June <u>}.1</u>

Celey D. Keene, Lab Director/Quality Manager

Page 2 of 7

#### Analytical Results For:

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

Received:	10/22/2010	Sampling Date:	10/21/2010
Reported:	11/01/2010	Sampling Type:	Soil
Project Name:	EME B-21 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EME B-21 BOOT		

### Sample ID: SB #1 @ 40' (H021120-02)

BTEX 8260B	mg/	'kg	Analyze	d By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	10/27/2010	ND	1.00	100	1.00		
Toluene*	<0.100	0.100	10/27/2010	ND	0.970	97.0	1.00		
Ethylbenzene*	<0.100	0.100	10/27/2010	ND	1.04	104	1.00		
Total Xylenes*	<0.300	0.300	10/27/2010	ND	3.09	103	3.00		
Surrogate: Dibromofluoromethane	86.0	% 80-120							
Surrogate: Toluene-d8	88.8	% 80-120							
Surrogate: 4-Bromofluorobenzene	104 9	% 80-120							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	10/22/2010	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/22/2010	ND	211	105	200	6.63	
DRO >C10-C28	<10.0	10.0	10/22/2010	ND	180	90.2	200	5.39	
Surrogate: 1-Chlorooctane	101 9	% 70-130							
Surrogate: 1-Chlorooctadecane	98.3	% 70-130							

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\*=Accredited Analyte

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Celey D.1 une

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: Reported:	10/22/2010 11/01/2010	Sampling Date: Sampling Type:	10/21/2010 Soil
Project Name:	EME B-21 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EME B-21 BOOT		

#### Sample ID: SB #2 @ 5' (H021120-03)

BTEX 8260B	mg/	kg	Analyzed By: CMS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	10/27/2010	ND	1.00	100	1.00		
Toluene*	<0.100	0.100	10/27/2010	ND	0.970	97.0	1.00		
Ethylbenzene*	<0.100	0.100	10/27/2010	ND	1.04	104	1.00		
Total Xylenes*	<0.300	0.300	10/27/2010	ND	3.09	103	3.00		
Surrogate: Dibromofluoromethane	88.4 9	% 80-120							
Surrogate: Toluene-d8	93.3 9	6 80-120							
Surrogate: 4-Bromofluorobenzene	96.1 9	% 80-120							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/22/2010	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/22/2010	ND	211	105	200	6.63	
DRO >C10-C28	<10.0	10.0	10/22/2010	ND	180	90.2	200	5.39	
Surrogate: 1-Chlorooctane	102 %	6 70-130							
Surrogate: 1-Chlorooctadecane	99.0 \$	% 70-130							

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\*=Accredited Analyte

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Celey D.Kune

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:	10/22/2010	Sampling Date:	10/21/2010
Reported:	11/01/2010	Sampling Type:	Soil
Project Name:	EME B-21 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EME B-21 BOOT		

### Sample ID: SB #2 @ 40' (H021120-04)

BTEX 8021B	mg/kg		Analyzed By: cms					<u> </u>	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2010	ND	2.05	102	2.00		
Toluene*	0.077	0.050	10/29/2010	ND	1.85	92.4	2.00		
Ethylbenzene*	<0.050	0.050	10/29/2010	ND	1.75	87.3	2.00		
Total Xylenes*	<0.150	0.150	10/29/2010	ND	5.25	87.4	6.00		
Surrogate: 4-Bromofluorobenzene (PIL	92.4	% 80-120							
Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	10/22/2010	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	10/22/2010	ND	211	105	200	6.63	
DRO >C10-C28	<10.0	10.0	10/22/2010	ND	180	90.2	200	5.39	
Surrogate: 1-Chlorooctane	90.8	% 70-130	1						

70-130

Surrogate: 1-Chlorooctadecane 89.7 %

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\*=Accredited Analyte

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Celey D.+ Tune

Celey D. Keene, Lab Director/Quality Manager

### **Notes and Definitions**

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
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 SM4500CI-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

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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### Appendix B Site photos

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



Site photo, facing west

8/19/11

Site photo, facing north

8/19/11