1R- 427-231

REPORTS

DATE: 2-18-11

Rice Environmental Consulting & Safety

P.O. Box 5630 Hobbs, NM 88241 Phone 575.393.4411 Fax 575.393.0293 RECEIVED OCD 2011 FEB 22 P 12: 53

CERTIFIED MAIL RETURN RECIEPT NO. 7008 1140 0001 3070 7003

February 18th, 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 Rice Operating Company – EME SWD System EME P-8-3 boot (1R427-231): UL/P sec. 8 T20S R37E

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.

Background and Previous Work

This site is located approximately 3 miles south of Monument, New Mexico at UL/P sec. 8 T20S R37E as shown on the Site Location Map (Figure 1). NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 23 +/- feet. In 2007 ROC initiated work on the former EME P-8-3 boot junction. 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 trench, the 15 ft bgs sample was collected for laboratory verification. Laboratory tests of the site showed negligible gasoline range organics (GRO) and diesel range organics (DRO). However, chlorides concentrations from the trench did not relent with depth with the 15 foot sample testing at 624 ppm. The soil from the trench was taken to a disposal facility and clean imported soil was used to backfill the site and to contour it to the surrounding landscape. The site was seeded, 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 March 13, 2008 and a junction box disclosure report (Appendix A) was submitted to NMOCD with all the 2007 junction box closures and disclosures.

ICP Investigative Results

As part of the Investigation and Characterization Plan approved by NMOCD on December 22nd, 2010, five soil bores were advanced through the former junction box site to a depth of 21 ft bgs on December 8th and 10th, 2010 (Figure 2). ROC personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID). Representative samples from the bore were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers (Appendix B). Laboratory readings showed chloride numbers ranging from a high of 1,300 mg/kg at 9 ft bgs in soil bore #3 to a low of 272 mg/kg at 21 ft bgs in soil bore #5. Laboratory preadings for GRO showed non-detect in all soil bores. However, laboratory DRO readings showed numbers of 77.7 mg/kg at 21 ft bgs in soil bore #1 and 149 mg/kg at 21 ft bgs in soil bore #5. All other DRO readings showed non-detect. Based on these findings, additional lateral delineation is required.

Recommendations

The P-8-3 boot site is possibly located within a regionally impacted groundwater area (Figure 3). To verify groundwater quality, ROC proposes to install a 4 inch, near-source monitor well approximately 25 ft southeast and a 2 inch, up gradient monitor well approximately 100 ft northwest of the former junction box site (Figure 4). Additional monitor wells may be required to fully delineation groundwater quality. ROC proposes to conduct lateral delineation of soils surrounding the former box site. The results of the additional delineation will be evaluated to determine dimensions of a possible infiltration barrier. Upon completion of the proposed work and sufficient quarters of monitor well sampling, a Corrective Action Plan (CAP) will be submitted to NMOCD with recommendations.

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,

ACW

Lara Weinheimer Project Scientist RECS (575) 441-0431

Attachments:

Figures – Site location map Site delineation plat Regional groundwater contamination plat Monitor well location plat
Appendix A – Disclosure report form
Appendix B – Soil bore log and laboratory analysis

Figures

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



T205 R37E

Case #: 1R427-231

CONSULTING & SAFETY

0	2,300	4,600	9,200
Drawi	ing date:1	1-17-10	Feet
Drafte	ed by: L. V	Veinheimer	

Soil bore information



EME Groundwater Contamination





122 W. Taylor Hobbs, NM 88240 Phone (575) 393-9174 Fax (575) 397-1471



Hypothetical CI- contamination

area



This map was prepared by and for Rice Operating Company. This map represents the known chloride impact concentrations in the groundwater as of 2011. As conditions change and/or new monitor wells are added, the contamination plume will undergo permutations that will be reflected in future maps. Rice Operating Company does not assume any responsibility for the use of this information by others.

Drawing date: 12-15-09 Revision date:1-11-11 Drafted by: Lara Weinheimer

Figure 3

Proposed MW Locations



Appendix A Junction Box Disclosure Report

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

RICE OPERATING COMPANY JUNCTION BOX DISCLOSURE* REPORT

				BOX LOCAT	ION					
SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	NEW BOX	DIMENSIC	NS - FEE	т
Eunice-Monument-	i-4 D 0 0	D		T200		1	Length	Width	Depth	
Eumont (EME)	JCt. P-8-3	F	0	1205	R3/E	Lea	no box;	junction eli	minated	
LAND TYPE: Bi Depth to Groun Date Started	LM STA dwater 8/30/20	23 007	FEE LAND feet Date Co	OWNER NMOCD	Jimmie T. SITE ASS 12/28/2007	Cooper ESSMENT I NMOC	OTHER RANKING S	CORE:	20 no	
- Soil Excavated	9	cubic ya	rds Exa	cavation Len	gth <u>5</u>	Width	3	Depth	15	fe
Soil Disposed	12	cubic ya	rds Of	fsite Facility	Sunc	lance	Location	Eunice	New Mex	ico

FINAL ANALYTICAL RESULTS: Sample Date 12/12/2007 Sample Depth 15 ft

TPH and chloride laboratory test results completed by using an approved laboratory and testing procedures pursuant to NMOCD guidelines.

Sample	<u>PID</u> (field)	<u>GRO</u>	DRO	<u>Chloride</u>
Location	ppm	mg/kg	mg/kg	mg/kg
GRAB @ 15 ft BGS	2.3	<10,0	<10.0	624

LOCATION DEPTH (ft) ppm 5 177 6 169 7 168 8 166 vertical 9 262 delineation trench at 10 482 former junction 602 11 site 12 720 13 690 14 472

15

683

General Description of Remedial Action:

This junction was eliminated with the

pipeline replacement/upgrade program. After the box lumber was removed, a vertical

delineation trench 15-ft-deep was made at the site using a backhoe. Soil samples were

collected at every foot of depth below the pipeline and field tested for chloride and organic

vapors. PID screenings resulted in low concentrations (<100 ppm), but chloride concentrations

generally increased with depth. A grab sample from the bottom of the trench was collected

for laboratory analysis which confirmed TPH (non-detect concentrations) meets NMOCD guidelines. The excavated soil from the trench was

taken to a disposal facility and 24 cubic yards of clean, imported soils were used to backfill the trench and spread on the surface. This soil was then seeded with a blend of native vegetation on 12/28/2007. NMOCD was notified of potential groundwater impact at this site on 3/13/2008.

ADDITIONAL EVALUATION IS HIGH PRIORITY

enclosures: photos, lab results, PID field screenings, chloride graph, disposal manifest

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

	Bruce Baker SIGNATURE	Bruce Ba	her COMPANY RI	CE Operating Company
REPORT ASSEMBLED BY	Kristin Farris Pope	SIGNATURE	Knistin dawn	Pape
DATE	3/13/2008	TITLE	Project Scientist	7

* This site is a "DISCLOSURE." It will be placed on a prioritized list of similar sites for further consideration.

CHLORIDE FIELD TESTS

EME P-8-3 boot

Unit P, Section 8, T20S, R37E











12/28/2007

seeding topsoil spread on site

CHLORIDE CONCENTRATION CURVE

RICE Operating Company

EME jct. P-8-3 unit 'P', Sec. 8, T20S, R37E

Backhoe samples at junction (source)

[CI] ppm	177	169	168	166	262	482	602	720	069	472	683
Depth bgs (ft)	5	6	7	×	6	10	11	12	13	14	15

Groundwater = 23 ft





PHONE (\$75) 393-2326 - 101 E. MARILAND - HOISES NE BARA

ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: BRUCE BAKER 122 W. TAYLOR HOBBS: NM 88240 FAXTQ: (575) 397-1471

ίt a

2

Receiving Date: 12/13/07 Reporting Date: 12/17/07 Project Owner: NOT GIVEN Project Name: EME P-8-3 BOOT Project Location: EME P-8-3 BOOT

Sampling Date: 12/12/07 Sample Type: SOIL Semple Condition: COOL & INTACT Sample Received By:ML Analyzed By: CK/KS

LAB NUMBER SAMPLE ID	(C ₆ +C ₇₂) (mg/kg)	DRO (>C ₁₂ -C ₂₈) (mg/kg)	Cr (mg/kg)
ANALYSIS DATE	12/14/07	12/14/07	10/13/17
SOURCE @ 15 GRAB	<10.0	<10.0	624
	3.0		THAT STOLES
	1. 1997 - 1897 - 1897 - 1897 - 1897 - 1897 - 1897 - 1897 - 1897 - 1897 - 1897 - 1897 - 1897 - 1897 - 1897 - 18		C. C. A. S. S. S.
Quality Control	1111		118217
	5.26	410	500 12
% Recovery	500	500	\$00
Relative Romant Differences	105	82.0	100
I WIND T OF CONK LANDOR TO CO	<0.1	6.3	<0.1

METHODS: TPH GRO & DRO: EPA SW-846 8015 M: Std. Methods 4500-CI B: *Analysis performed on a 1:4 w.v aqueous extract.

Chemist

Date

H13906TCL RICE

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive namedy for any claim arking, whether based in connect or tort, "Ihill be instead to jive singure paid by client to any arking and unless made in white a planet or tort," inhill be instead to jive singure paid by client to any arking and unless made in white any arking and reached by Cardinal within they (30) are later connection of the applicable of limits including, white any arking and reached by Cardinal within they (30) arking any arking an

ARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(505) 393-2326 FAX (505) 393-2476 (325) 673-70	01 FAX (326)673-7020
Company Name: Rice OperAtine Co	BILLYO ANALYSIS REDUEST
Project Manager: BRINCE' BAKER	P.O. #:
Address: 122 W. Taylor	Company:
City: Hobbs State: UM Zip: 28240) Attn:
Phone #: 393-9174 Fax #: 397-1471	Address:
Project #: Project Owner:	City:
Project Name: EME P-8-3 Bcot	State: Zip:
Project Location: EME P-8-3 &cot	Phone #:
sampler Name: Bence Becker	Fax #:
FOR LAB USE OWLY MAT	RIX PRESERV SAMPLING
LEK COMP.	28
Lab I.D. Sample I.D. Reverse	DH BRZE: COOL ER: ER: GE
105 LSVM 1039 4009 4009 4009 4009 4009 4009 4009 4	
H134U0-1 Source @ 15' Gene 61 3	V 12-12-01 21:26pm VV
PLEASE NOTE: Liability and Demagna, Cardinate liability and distrife excitative remody for any claim arbitro Machine, based i	
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Relinquished By:	a , , Phone Result: □ Yes □ No Add'I Phone #:
Bruce Badier Times Minte	Cell T Fax Result: D Yes D No Add'I Fax #:
Relinquished By: Date: Received By:	Email to blacker & ricesuch. com
Time:	CCH to purise ricesuch com
Delivered By: (Circle One) Sample Cool It	Condition CHECKED BY:
Sampler) UPS - Bus - Other:	No. Color

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

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	Sund? ce Servic P.O. Box 1737 ★ Eunice, New (575) 394-2511	ces, Inc. Mexico 88231	~ · · · · ·	
		Tic	cket # 71288	
ease Operator/Shipper	r/Company: <u>Kice</u>			- 50)
ease Name:	Mr. BOOL, P.38	(P-8-3 Boo	н) BB	$ \rightarrow \mathcal{L} $
ransporter Company:	- Spillelency	Time	AM/PM	
ate: 17 /27/2	7 Vehicle No. 7/27	Driver No.		
narge 10:/				······
	TYPE OF MATER	IAL		
Produced Water	Drilling Fluids	🗌 Co	mpletion Fluids	
Tank Bottoms	Contaminated S	oil 🗌 C-1	117 No.:	
Cther Materiala				
	Boaw coment.			
Description:	Mr. Hall		DUT LOUT	
Decemption				
OLUME OF MATERIAL	BBLS. 17	ARDS		· ·
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THIS WILL CERTIF atement at the above deso rtify that no additional t cident.	Y that the above Transporter loaded cribed location, and that it was tender materials were added to this load, a	the material repre red by the above d and that the mater	sented by this Transpo escribed shipper. This ial was delivered wit	orter will thout
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RICE OPERATING COMPANY

122 West Tayor Hobbs, NM 88240 PHONE: (505) 393-9174 FAX: (505) 397-1471 PID METER CALIBRATION & FIELD REPORT FORM



MODEL: PGM 7600 MODEL: PGM 7600 MODEL: PGM 7600 MODEL: PGM 7600 SERIAL NO: 110-013676 SERIAL NO: 110-013744 SERIAL NO: 110-12383 SERIAL NO: 110-012920

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: 07-3353	EXPIRATION DATE: $4/08/09$
FILL DATE: 10/08/07	METER READING ACCURACY: 100 ppm

ACCURACY : +/- 2%

0

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
EME	Jet. P-8-3 Boot	ρ	8	205	37E

Dource			
SAMPLE ID	PID	SAMPLE ID	PID
13'	1.9		
141	59.7		
15'	2.3		
		0 DV	
		COF "	

I verify that I have calibrated the above insrument in accordance to the namufacture operation manual.

SIGNATUE:

Bruce Baker

12-12-07 DATE:

Appendix B ICP soil bore installation

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

Logger: Driller: Drilling Met Start Date: End Date: Comments	Jo Harriso hod: s: Located a TD = 21	rdan Woo on & Coop Air rotary 12/8/2011 12/8/2011 at the so DRAF	odfin per, Inc. y 0 0 Durce o TED BY:	SB-5 SB-3 SB-1 SB-2 SB-4 f the former junction box site. L. Weinheimer GW = 23 ft	Project Name: Well ID: EME P-8-3 boot SB Project Consultant: RECS Location: UL/P sec. 8 T20S R37E Lat: 32°34'51.143"N Count Long: 103°16'5.578"W State:		Well ID: SB-1 S R37E County: LEA State: NM	
Depth (feet) f	chloride ield tests	LAB	PID	Description	Lithology We		Lithology Well Construction	
15 ft 15 ft 18ft 21 ft	565 471 332	CI- 624 GRO <10 DRO <10 CI- 320 GRO <10 DRO 77 7	0	Tan very fine silty sand with small caliche fragments				bentonite seal



Logger: Jordan Wo Driller: Harrison & Coo Drilling Mothod: Air rota:		Woodfin Cooper, Ir	SB-5 SB-3 SB-7 SB-2 SB-3 SB-7 SB-2	Project Name: Well ID:				
Stort Dot	wethou.	10/9	/2010	SB-4	FIC			
End Date	le.	12/0	2010	6	Dro	EME P-8-3 D		SB-2
End Date	e:	12/0	ft oast o	the former junction box site		petion: UL/P	nt: REUS	0 0275
Comme	ents. Luca	aleu 10	n easi u	the former junction box site.	LUC	cation. UL/P :	ec. o 120	13 R3/E
	TD =	21 ft	RAFTED	3Y: L. Weinheimer GW = 23 ft	Lat Lor	: 32°34'51.149 1g: 103°16'5.4	County: LEA State: NM	
Depth (feet)	chlorid field tes	e ts LA	B PI	Description		Lithology	Well	Construction
			+	 Brown very fine sand				
3 ft	165		0					
				Tan very fine silty sand				
6 ft	290	-	0	_				
9 ft	242	-	0	-	2			
								bentonite
12 ft	478	C 96	0 0					> seal
		GF <1	0					
		DF <1	0 0	Tan very fine sand with very small caliche fragments				
15 ft	391	_	0					
			-					
18 ft	370	+	0	-				
		С	-					
21 ft	309	48 GF	0 0					
		<1 DF <1	0					



Logger: Jordan Woo Driller: Harrison & Coo		Jo Harriso	rdan Woo on & Coo	odfin per, Inc.	SB-5 SB-3 SB-7 SB-2		RICE CONSULT	E	CS			
Drilling I	Method:		Air rotan	v	S S 8		iect Name	ell ID:				
Start Date: 12/8/2010		0	SB-4					CD 2				
End Date	e:		12/8/201	0	®	Pro	iect Consult	ant	RECS	30-3		
Comme	ents: 10	cated	12 ft w	est of t	he former junction box site	1 0	cation: III/P	SAC	8 T209	S B37E		
		outoo		001 01 1				300	. 0 1200	D NO/L		
			DRA	TED BY	: L. Weinheimer	Lat	: 32°34'51.14	7"N		County: EA		
	TD	= 21	ft		GW = 23 ft	Lo	ng: 103°16'5.	687	/"W	State: NM		
Donth	ahlari	ida								State. NW		
Uepth (foot)	field to	lue	LAB	PID	Description		Lithology		Well C	Vell Construction		
(ieei)		5313					STATE STATE	H				
					Brown very fine sand slightly)		
					consolidated							
3 ft	145	5		0								
					Tan fine silty sand							
6 ft	690)		0								
	000			0			1. Star 1.					
			CI-									
9 ft	878	3	1300 GRO	0								
			<10									
			DRO									
			<10							bentonite		
12 ft	481			0						> seal		
				_						ooui		
					Tan very fine silty sand with caliche							
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15 ft	400)		0								
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1011	550			0								
			CI-									
21 ft	309		384	0								
			GRO									
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			<10		Shering to the second second)		



Logger: Jorda Driller: Harrison		Jordan Woodfin Iarrison & Cooper, Inc.		SB-5 SB-3 SB-1 SB-2		RICE	Project Name: Wall ID:				
Drilling I	Method:	Air rotan	y			Project Name: Well ID:					
Start Dat	ie:	12/8/201	0	SB-4 ®		EME P-8-3 boot SB-4					
Comme	Comments: Located 10 ft south of			the former junction box site	Pro	oject Consulta	Int: RECS				
Comments. Localed to it south o			outinoi	the former junction box site.			SEC. 0 120	13 N3/E			
		DRAF	FTED BY	: L. Weinheimer	La	: 32°34'51.041	"N	County: LEA			
	TD =	21 ft		GW = 23 ft	Lo	ng: 103°16'5.5	582"W	State: NM			
Depth (feet)	chloride field test	LAB	PID	Description		Lithology	Well	Construction			
3 ft	485		0								
6 ft	447			Tan silty sand with small caliche fragments	aliche						
	447										
9 ft	634	CI- 944	0								
		<10 DRO <10						bentonite			
12 ft	543		0					seal			
				Tan very fine silty sand with small caliche fragments							
15 ft	380		0								
18 ft	396		0								
21 ft	398	Cl- 528	0								
		GRO									
		DRO									
<10							U I				



Logger: Jordan Wo Driller: Harrison & Coo Drilling Method: Air rota		rdan Woo on & Coo Air rotar	odfin per, Inc. y	SB-5 SB-3 SB-1 SB-2 SB-3 SB-1 SB-2		oject Name:	RE	CS CS BI SAFETY. LLC	/ell ID:		
Start Dat	te:		12/10/20-	10	SB-4	EME P-8-3 hoot				SB-5	
End Date	e:		12/10/20	10		Pro	ject Consul	tant	t: RECS	000	
Comments: Located 14 ft north w			14 ft n	orth we	est of the former junction box site.	Lo	Location: UL/P sec. 8 T20S R37E				
DRAFTED B TD = 21 ft			DRAI ft	FTED BY	/: L. Weinheimer GW = 23 ft	Lat: 32°34'51.233"N Long: 103°16'5.665"W			N 5"W	County: LEA State: NM	
Depth (feet)	chlori field te	ide ests	LAB	PID	Description	Lithology We		Well C	ell Construction		
		_			Brown very fine sand (slightly						
3 ft	170)		0	consolidated)						
					Tan silty sand with caliche fragments						
6 ft	227	7		0	Tan sity sand with callene hagments						
9 ft	630 <mark>976</mark> 0		0								
			<10 DRO		Light brown fine silty sand with						
12 ft	531		<10	0	caliche tragments					bentonite > seal	
		-		100							
15 ft	444			0							
18 ft	333			0							
		_									
21 ft	21 ft 210 CI- 272 0 GRO <10 DRO 149		0								



December 13, 2010

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

RE: EME JCT P-8-3

Enclosed are the results of analyses for samples received by the laboratory on 12/09/10 9:50.

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. Keine

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:	12/09/2010	Sampling Date:	12/08/2010
Reported:	12/13/2010	Sampling Type:	Soil
Project Name:	EME JCT P-8-3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SB #1 @ 15' (H021480-01)

Chloride, SM4500CI-B	mg/k	g	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	624	16.0	12/10/2010	ND	416	104	400	0.00	
трн 8015м	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	12/10/2010	ND	164	81.9	200	3.76	
DRO >C10-C28	<10.0	10.0	12/10/2010	ND	163	81.3	200	2.60	
Surrogate: 1-Chlorooctane	87.7 %	6 70-130							
Surrogate: 1-Chlorooctadecane	92.5 %	6 70-130							

Sample ID: SB #1 @ 21' (H021480-02)

Chloride, SM4500Cl-B	mg ,	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	12/10/2010	ND	416	104	400	0.00	
трн 8015м	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	12/10/2010	ND	164	81.9	200	3.76	
DRO >C10-C28	77.7	10.0	12/10/2010	ND	163	81.3	200	2.60	
Surrogate: 1-Chlorooctane	102	% 70-130							
Surrogate: 1-Chlorooctadecane	105	% 70-130							

Cardinal Laboratories

*=Accredited Analyte

PLEXE NOTE: Libblity and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or bart, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistowere shall be deemed walked unless made in writing and received by client, its abstillations, after completion of the applicable service. In no event shall Cardinal be liable for incidential or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profils incurred by client, its substillaties, affiliates or successors arising out of or related to the performance of the services increased provided and the services increased and the services increased and the services increased and the service in the service increased and the service in the service intervence in the service in our of the service in the service intervence in the service in the service intervence intervence into discount of the service.

Celey D.Keine

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:	12/09/2010	Sampling Date:	12/08/2010
Reported:	12/13/2010	Sampling Type:	Soil
Project Name:	EME JCT P-8-3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SB #2 @ 12' (H021480-03)

Chloride, SM4500Cl-B	mg/l	(g	Analyze	Analyzed By: HM					
Anaiyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	960	16.0	12/10/2010	ND	416	104	400	0.00	
трн 8015м	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	12/10 /2010	ND	164	81.9	200	3.76	
DRO >C10-C28	<10.0	10.0	12/10/2010	ND	163	81.3	200	2.60	
Surrogate: 1-Chlorooctane	90.9 %	6 70-130	1						
Surrogate: 1-Chlorooctadecane	94.4 %	6 70-130	1						

Sample ID: SB #2 @ 21' (H021480-04)

Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: HM			<u> </u>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	12/10/2010	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	12/10/2010	ND	164	81.9	200	3.76	
DRO >C10-C28	<10.0	10.0	12/10/2010	ND	163	81.3	200	2.60	
Surrogate: 1-Chlorooctane	89.7	% 70-130					·		
Surrogate: 1-Chlorooctadecane	92.7	% 70-130							

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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:	12/09/2010 12/13/2010	Sampling Date: Sampling Type:	12/08/2010 Soil
Project Name:	EME JCT P-8-3	Sampling Condition:	Cool & Intact
Project Number: Project Location:	NONE GIVEN NONE GIVEN	Sample Received By:	Jodi Henson

Sample ID: SB #3 @ 9' (H021480-05)

Chloride, SM4500CI-B	mg/l	(g	Analyze	d By: HM			-		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1300	16.0	12/10/2010	ND	416	104	400	0.00	
трн 8015м	mg/l	(g	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	12/10/2010	ND	164	81.9	200	3.76	
DRO >C10-C28	<10.0	10.0	12/10/2010	ND	163	81.3	200	2.60	
Surrogate: 1-Chlorooctane	88.0 %	6 70-130							
Surrogate: 1-Chlorooctadecane	99.1 %	6 70-130							

Sample ID: SB #3 @ 21' (H021480-06)

Chloride, SM4500Cl-B	mg /	'kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	12/10/2010	ND	416	104	400	0.00	
трн 8015м	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	12/10/2010	ND	164	81.9	200	3.76	
DRO >C10-C28	<10.0	10.0	12/10/2010	ND	163	81.3	200	2.60	
Surrogate: 1-Chlorooctane	98.3	% 70-130							
Surrogate: 1-Chlorooctadecane	103	% 70-130							

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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:	12/09/2010	Sampling Date:	12/08/2010
Reported:	12/13/2010	Sampling Type:	Soil
Project Name:	EME JCT P-8-3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SB #4 @ 9' (H021480-07)

Chloride, SM4500Cl-B	mg/l	(g	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	944	16.0	12/10/2010	ND	416	104	400	0.00	
трн 8015М	mg/l	cg	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	12/10/2010	ND	164	81.9	200	3.76	
DRO >C10-C28	<10.0	10.0	12/10/2010	ND	163	81.3	200	2.60	
Surrogate: 1-Chlorooctane	111 %	6 70-130							
Surrogate: 1-Chlorooctadecane	114 %	6 70-130							

Sample ID: SB #4 @ 21' (H021480-08)

Chloride, \$M4500CI-B	mg	/kg	Anałyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	12/10/2010	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	12/10/2010	ND	190	95.1	200	14.3	
DRO >C10-C28	<10.0	10.0	12/10/2010	ND	187	93.7	200	5.04	
Surrogate: 1-Chlorooctane	85.4	% 70-130							
Surrogate: 1-Chlorooctadecane	90.1	% 70-130							

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PLEASE NOTE: Likebility and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or bort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whileborer shall be deemed waited in links made in writing and received by client far analyses. But claims, including those for negligence and backding, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its substituties or successors arising out of or related to the performance of the services interruptions, loss of use, or loss of profits incurred by client, its substituties or successors arising out of or related to the performance of the services interruptions, loss of use, or loss of whether such claim is based upon any of the adverse tool receases or otherwise. Results relate only be the samples its information of the services.

Celey D.Kune

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 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

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PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remety for any claim arising, whether based in contract or bort, shall be limited to the amount pad by client for analyses. All claims, including those for negligenon and any other cause whiteboerns shall be deemed waterd unless made in writing and received by client like limited to the applicable sorrice. In no event shall Cardinal be liable for inclinent pad in writing and received by client like limited contract or tort, shall be limited to the applicable sorrice. In no event shall Cardinal be liable for inclinent pad in consequential damages, including, without limitation, business interruptors, loss of uses or inclinent by client like sources of an and exceeded so the performance of the sortices hereinder by Cardinal, regardless of whether such claims based in limited to the performance of the sortices.

Celey D.Keine

Celey D. Keene, Lab Director/Quality Manager

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Page 7 of 7

December 15, 2010

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

RE: EME JCT P-8-3

Enclosed are the results of analyses for samples received by the laboratory on 12/10/10 16:45.

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,

Celuy D. Keine

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:	12/10/2010	Sampling Date:	12/10/2010
Reported:	12/15/2010	Sampling Type:	Soil
Project Name:	EME JCT P-8-3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SB #5 @ 9' (H021499-01)

Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	976	16.0	12/13/2010	ND	416	104	400	3.77	
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	12/14/2010	ND	213	106	200	6.74	
DRO >C10-C28	<10.0	10.0	12/14/2010	ND	226	113	200	5.87	
Surrogate: 1-Chlorooctane	90.0	% 70-130	,		<u></u>				
Surrogate: 1-Chlorooctadecane	90.1	% 70-130	I						

Sample ID: SB #5 @ 21' (H021499-02)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	12/13/2010	ND	416	104	4 00	3.77	
трн 8015м	mg	/kg	Analyze	d By: AB					<u> </u>
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/14/2010	ND	213	106	200	6.74	
DRO >C10-C28	149	10.0	12/14/2010	ND	226	113	200	5.87	
Surrogate: 1-Chlorooctane	92.6	% 70-130)						
Surrogate: 1-Chlorooctadecane	92.3	% 70-130)						

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*=Accredited Analyte

PLESE: NOTE: Likeliky and Damages. Cardinal's likeliky and client's exclusive remech for any claim arking, 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 whistoerer strail be deemed warred inless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be lable for incidental or consequential damages, lackding, without limitation, business hieruptions, loss of use, or boss of profils incident by client is substituties, afflictes or successors acting out of or related to the performance of the sorkes hereunder by Christian therepoint shall not be reproduced encage in full with within approval of Cardinal Liberatories.

Celuy D. Kune

Celey D. Keene, Lab Director/Quality Manager

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

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. Kune

Celey D. Keene, Lab Director/Quality Manager

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