1R - 427-154

APPROVALS

YEAR(S):

2013

Hansen, Edward J., EMNRD

From:	Hansen, Edward J., EMNRD
Sent:	Monday, September 09, 2013 11:52 AM
To:	Hack Conder (hconder@riceswd.com)
Cc:	Leking, Geoffrey R, EMNRD; Laura Pena (lpena@riceswd.com); Katie Jones <kjones@riceswd.com> (kjones@riceswd.com); Scott Curtis (scurtis@riceswd.com)
Subject:	Remediation Plan (1R427-154) Termination - ROC EME Jct P-24 Site

RE: Termination Request
for the Rice Operating Company's
EME Jct P-24 Site
Unit Letter P, Section 24, T20S, R36E, NMPM, Lea County, New Mexico
Remediation Plan (1R427-154) Termination

Dear Mr. Conder:

The New Mexico Oil Conservation Division (OCD) has received Rice Operating Company's report and request to close the above-referenced site, dated August 9, 2013 (received August 14, 2013) (including further information, dated September 5, 2013). The report is acceptable to the OCD.

The above-referenced report, submitted in accordance with 19.15.29 NMAC (Rule 29; formally, Rule 116), indicates that Rice Operating Company has met the requirements of 19.15.29 NMAC; therefore, the OCD approves the report and hereby notifies you that the remediation plan (1R427-154) is terminated in accordance with 19.15.29 NMAC.

Please be advised that OCD approval of this report does not relieve the owner/operator of responsibility should operations pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the owner/operator of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

If you have any questions regarding this matter, please contact me at 505-476-3489.

Edward J. Hansen
Hydrologist
Environmental Bureau

RICE *Operating Company*
122 West Taylor • Hobbs, New Mexico 88240
Phone: (575) 393-9174 • Fax: (575) 397-1471

CERTIFIED MAIL
RETURN RECEIPT NO. 7007 2560 0000 4569 9361

August 9, 2013

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: Termination Request
EME Jct. P-24 (1R427-154): UL/P, Sec. 24, T20S, R36E
RICE Operating Company – Eunice Monument Eumont (EME) SWD System

Mr. Hansen:

Rice Operating Company (ROC) is the service provider (agent) for the EME Saltwater Disposal (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
In 2004, ROC initiated work on the former P-24 junction box. The site is located in UL P, Sec. 24, T20S, R36E. The junction box was located south of an abandoned facility with visible impacted area caused by hydrocarbons. An updated NM OSE records indicate that groundwater would likely be encountered at a depth of approximately 72 +/- feet; however, an area of no groundwater is located west of the site. The site was delineated using a backhoe to form a 25x20x12 ft deep excavation and soil samples were screened at regular intervals for both hydrocarbons and chlorides. Each sample was field titrated for chlorides and screened for TPH, resulting in low concentrations for chlorides. Representative composite samples were analyzed by a commercial laboratory to be analyzed for chloride, TPH, and BTEX. the 4-wall composite resulted in a chloride concentration below detectable limits, a gasoline range organics (GRO) concentration of 319 mg/kg, a diesel range organics (DRO) concentration of 1,010 mg/kg, a benzene concentration of 0.127 mg/kg, a toluene concentration of 0.437 mg/kg, an ethylbenzene concentration of 0.533 mg/kg and a total xylenes of 2.418 mg/kg. The bottom field composite sample resulted in a chloride concentration of 106 mg/kg, a GRO concentration of 319 mg/kg, a DRO concentration of 819 mg/kg, a benzene concentration of 0.189 mg/kg, a toluene concentration of 0.587 mg/kg, an ethylbenzene concentration of 0.758 mg/kg and a total xylenes

concentration of 2.797 mg/kg. The bottom lab composite was also analyzed for BTEX, which resulted in similar concentrations to the field composite. The excavated soil was blended and a sample was sent to a commercial laboratory for analysis of chloride and TPH, resulting in a chloride concentration below detectable limits, a GRO concentration of 250 mg/kg, a DRO concentration of 732 mg/kg, a benzene concentration of 0.0352 mg/kg, a toluene concentration of 0.171 mg/kg, an ethylbenzene concentration of 0.291 and a total xylenes concentration of 1.056 mg/kg. The excavation was backfilled with the blended soil up to 2 ft below ground surface. The remaining excavation was backfilled with clean imported soil to ground surface and contoured to the surrounding area. A junction box is no longer required at this site.

The junction box site location map, area map, final report, photodocumentation, excavation cross-section diagram, 2004 BTEX Study, chloride graph, laboratory analysis, disposal manifests, water flow direction diagram and current photodocumentation are attached.

Recommendations
Site investigation demonstrates that residual chloride and hydrocarbons in the vadose zone will not with reasonable probability contaminate groundwater in excess of NMOCD standards. This site meets the requirements of the NMOCD-approved Revised Junction Box Upgrade Work Plan (July 16, 2003). As such, ROC request termination of the regulatory file, or similar closure status.

Please contact me at (575)393-2967 if you have any questions or wish to discuss this site. Thank you for your time and consideration.

Sincerely,
RICE Operating Company

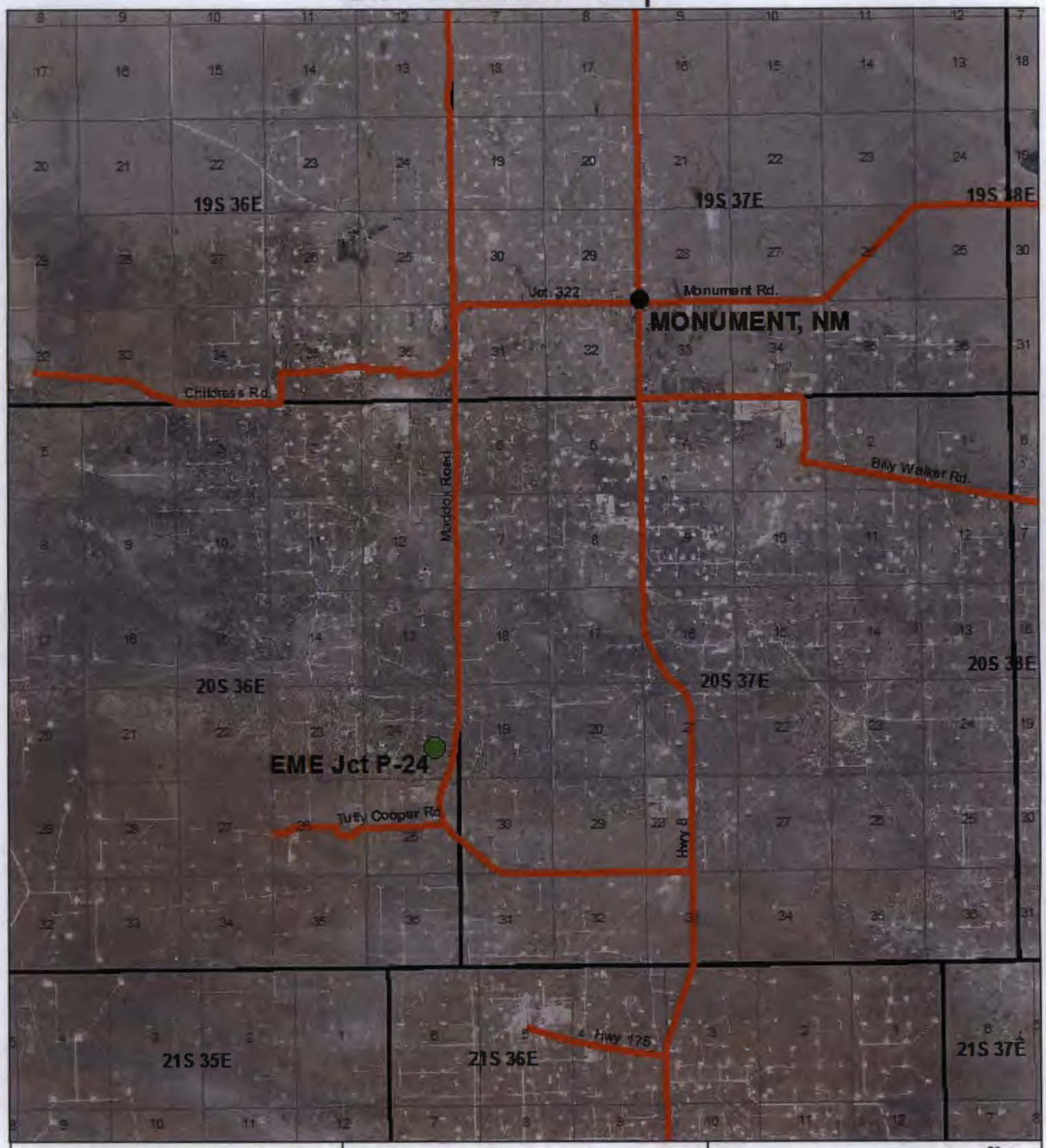
Hack Conder
Environmental Manager

enclosures

Site Maps

RICE *Operating Company* (ROC)
112 West Taylor Hobbs, NM 88240
Phone: (575) 393-9174 Fax: (575) 397-1471

Site Location Map



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

EME Jct P-24 (1R427-154)

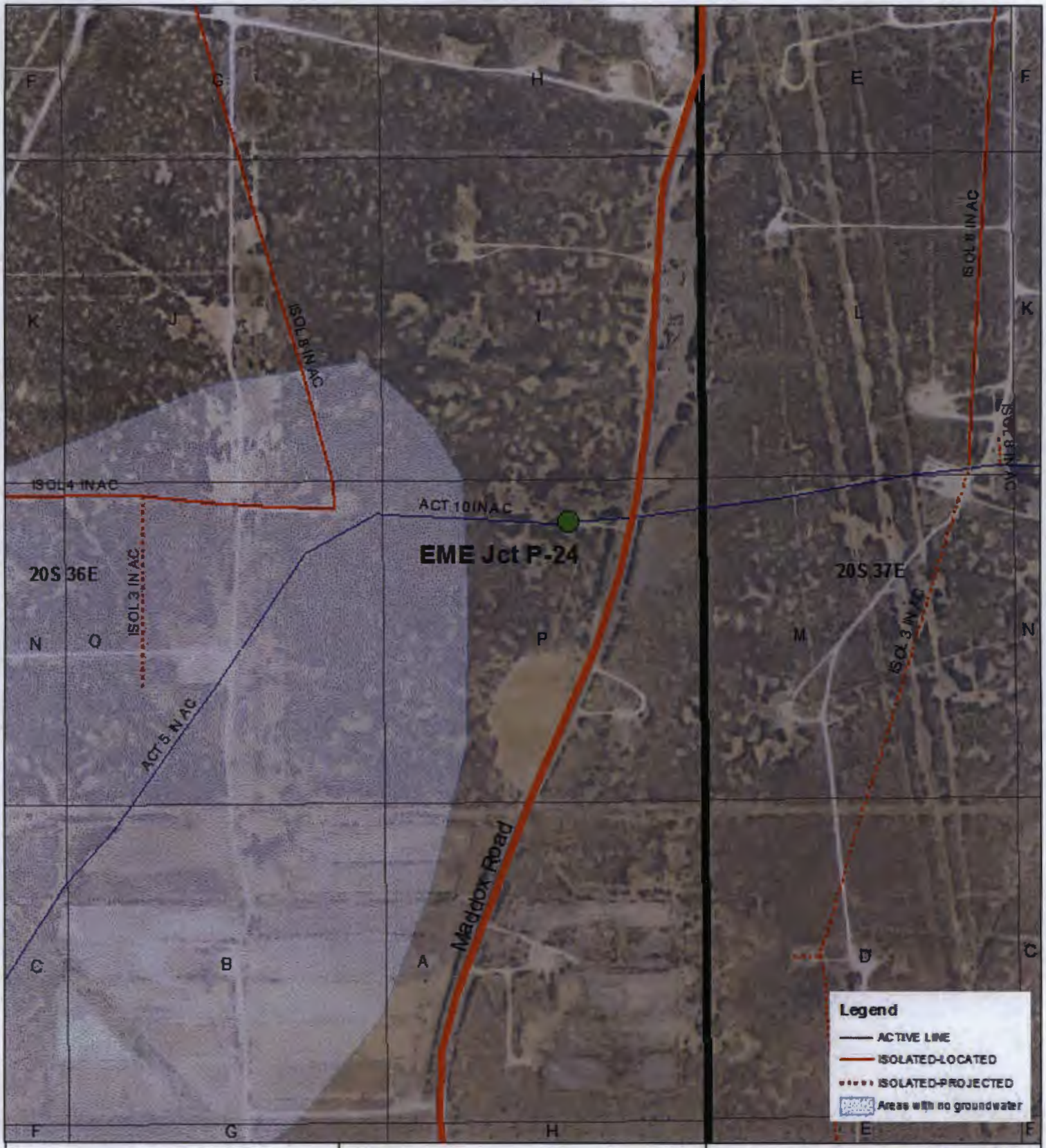
UL/P SECTION 24
T20S, R36E
LEA COUNTY, NM

N W E S

0 1 2 Miles

Drawing date: 5/6/733LBS

Area Map



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

RECS

EME Jct P-24 (1R427-154)

UL/P SECTION 24
T20S, R36E
LEA COUNTY, NM

N
W E
S

0 480 960
Feet

Drawing date: 5/16/13 LS

Junction Box Report

RICE *Operating Company* (ROC)
112 West Taylor Hobbs, NM 88240
Phone: (575) 393-9174 Fax: (575) 397-1471

RICE OPERATING COMPANY
JUNCTION BOX FINAL REPORT

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length	Width	Depth
EME	P-24	P	24	20S	36E	Lea	no box--junction eliminated		

LAND TYPE: BLM _____ STATE _____ FEE LANDOWNER Dale Cooper Family Trust OTHER _____

Depth to Groundwater 36 or 117 feet NMOCD SITE ASSESSMENT RANKING SCORE: ?*

Date Started 8/9/2004 Date Completed 8/19/2004 OCD Witness No

Soil Excavated 222 cubic yards Excavation Length 25 Width 20 Depth 12 feet

Soil Disposed 36 cubic yards Offsite Facility South Monument Location Monument, NM

FINAL ANALYTICAL RESULTS: **Sample Date** 8/12/2004 **Sample Depth** 12 ft

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

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chloride mg/kg
4-WALL COMP.	0.127	0.437	0.533	2.418	319	1010	<20
BOTTOM *FIELD* COMP.	0.189	0.587	0.758	2.797	319	819	106
BOTTOM *LAB* COMP.	0.123	0.541	0.946	3.195	XXX	XXX	XXX
REMED. BACKFILL	0.0352	0.171	0.291	1.056	250	732	<20

General Description of Remedial Action: This junction box was located to the south of an abandoned production battery. Although no facilities remain at the site, a large barren surface is visually-impacted by hydrocarbon. The junction was eliminated and the existing pipeline was slipped with a new poly pipeline. The old junction box site was delineated using a backhoe while chloride field tests and PID screenings were conducted at regular intervals. Throughout the 25 x 20 x 12-ft-deep excavation, chloride field test concentrations were very low and similar to background levels. TPH impact, however, was evident within the excavation and PID concentrations were elevated. The excavated soils were blended and backfilled into the hole. 36 yds^3 of this soil was disposed of at a permitted facility. 36 yds^3 of clean, imported soils were backfilled on top up to the surface, covering approximately the top 2 ft (see diagram). Remaining chloride is not threatening to groundwater, remaining TPH will naturally attenuate.

* Depth to groundwater here is ambiguous. USGS maps indicate that the site is located near a hydrogeologic boundary north of which groundwater is around 36 ft but is 117 ft to the south.

LOCATION	DEPTH (ft)	ppm
vertical trench at junction	6	84
	7	114
	8	85
	9	145
	10	143
	11	116
	12	87
15 ft North of junction	6	87
	8	113
	10	87
	12	87
4-wall comp.	n/a	84
bottom comp.	12	85
remed. backfill	n/a	115
background	0	60

enclosures: chloride graph, photos, lab results, disposal manifests, groundwater map, BTEX results table, excavation cross-section

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

SITE SUPERVISOR Joe Gatts SIGNATURE Joe Gatts COMPANY RICE Operating Company

REPORT ASSEMBLED BY Kristin Farris Pope SIGNATURE Kristin Farris Pope

DATE 10/21/2004 TITLE Project Scientist

EME jct. P-24

unit 'P', Sec. 24, T20S, R36E

undisturbed junction box looking north 1/7/2004

vertical delineation at box site 8/9/2004

north excavation wall with spoils (looking north) 8/11/2004

backfilling excavation 8/19/2004

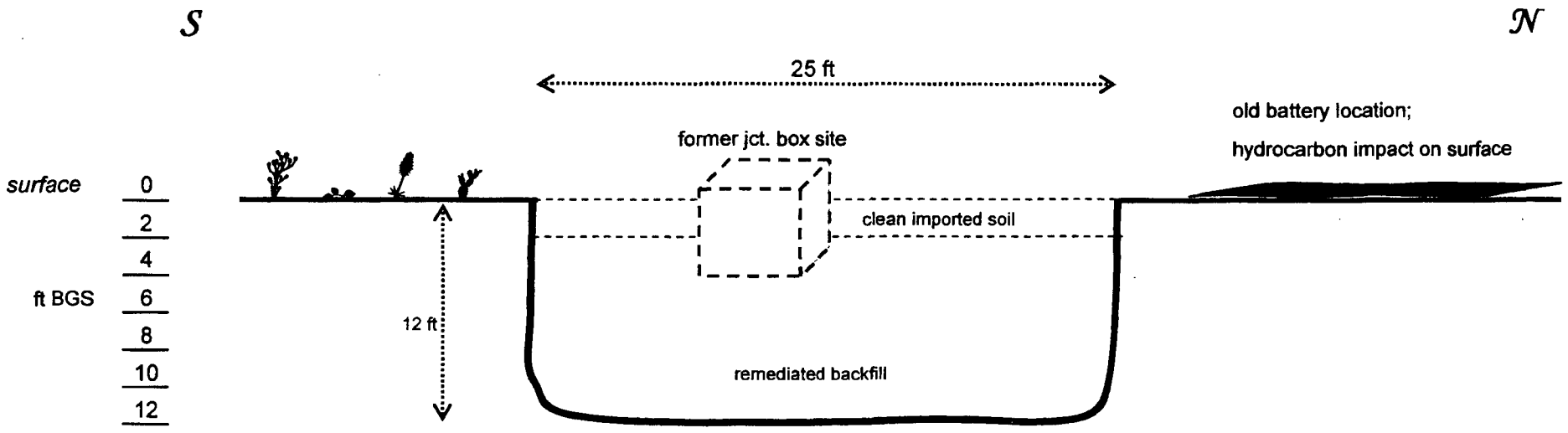
ID plate marking former junction (battery site in background)
8/25/2004

backfilled site with battery site in background 9/22/2004

EME jct. P-24

25 x 20 x 12 ft

Excavation Cross-Section

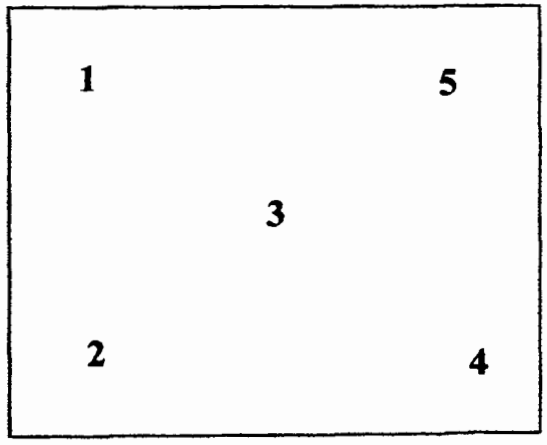


2004 BTEX Study

Revised Junction Box Upgrade Plan (2003)

System: EME
Site: jct. P-24
Date: 8/12/2004
Sampler: Joe Gatts (RICE Operating)
Laboratory: Environmental Lab of Texas

Location	Component	PID reading (ppm)	FIELD COMPOSITE (mg/kg)			
			Benzene	Toluene	Ethyl Benzene	Total Xylenes
bottom composite at 12 ft BGS	1	31.0	0.189	0.587	0.758	2.797
	2	1027.0				
	3	737.0				
	4	853.0				
	5	1206.0				
			LAB COMPOSITE (mg/kg)			
			0.123	0.541	0.946	3.195



All composite sample components are collected in this pattern.

Field PID tests <100 ppm are considered final for BTEX. If PID is >100 ppm, the components of the BTEX composite sample will be collected individually and will be composited under laboratory conditions to prevent excessive volatilization. A 15-box, 30-sample study will be made to compare field-compositing with lab-compositing BTEX samples. Composite components are collected in a skewed 'W' pattern.

Revised Junction Box Upgrade Work Plan (July 16, 2003)

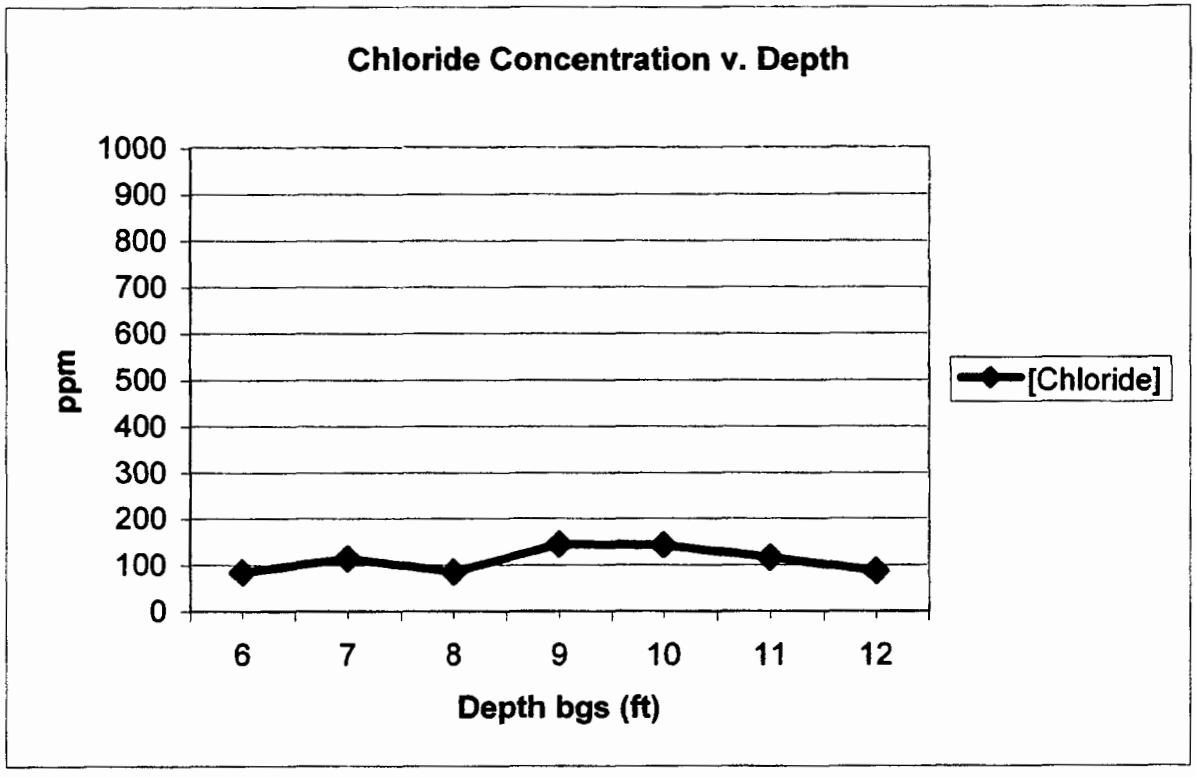
EME jct. P-24

T20S, R36E

Vertical Delineation at Source

Depth bgs (ft)	[Cl⁻] ppm
6	84
7	114
8	85
9	145
10	143
11	116
12	87

Depth to groundwater here is ambiguous. USGS maps indicate that the site is located on a hydrogeologic boundary line to the north of which groundwater depth is ~36 ft and 117 ft to the south.



ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Roy Rascon
Rice Operating Co.
122 W. Taylor
Hobbs, NM 88240

Project: EME P-24
Project Number: None Given
Location: P-24

Lab Order Number: 4H18001

Report Date: 08/24/04

Rice Operating Co.	Project: EME P-24	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	08/24/04 10:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Bottom Comp. at 12' bgs	4H18001-01	Soil	08/12/04 14:15	08/17/04 19:00
4 Wall Comp.	4H18001-02	Soil	08/12/04 14:00	08/17/04 19:00
Remed. Backfill	4H18001-03	Soil	08/12/04 14:15	08/17/04 19:00
Lab Comp. Bottom 1 - 5	4H18001-04	Soil	08/12/04 14:15	08/17/04 19:00

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME P-24	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	08/24/04 10:54

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bottom Comp. at 12' bgs (4H18001-01) Soil									
Benzene	**0.198**	0.100	mg/kg dry	100	EH42303	08/20/04	08/20/04	EPA 8021B	
Toluene	**0.587**	0.100	"	"	"	"	"	"	
Ethylbenzene	**0.758**	0.100	"	"	"	"	"	"	
Xylene (p/m)	**2.43**	0.100	"	"	"	"	"	"	
Xylene (o)	**0.367**	0.100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*108 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.4 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**319**	10.0	mg/kg dry	1	EH41713	08/18/04	08/18/04	EPA 8015M	
Diesel Range Organics >C12-C35	**819**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**1140**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*102 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*111 %*	*70-130*		"	"	"	"	
4 Wall Comp. (4H18001-02) Soil									
Benzene	**0.127**	0.0500	mg/kg dry	50	EH42303	08/20/04	08/20/04	EPA 8021B	
Toluene	**0.437**	0.0500	"	"	"	"	"	"	
Ethylbenzene	**0.533**	0.0500	"	"	"	"	"	"	
Xylene (p/m)	**2.13**	0.0500	"	"	"	"	"	"	
Xylene (o)	**0.288**	0.0500	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*125 %*	*80-120*		"	"	"	"	*S-04*
Surrogate: 4-Bromofluorobenzene		*101 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**319**	10.0	mg/kg dry	1	EH41713	08/18/04	08/18/04	EPA 8015M	
Diesel Range Organics >C12-C35	**1010**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**1330**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*91.8 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*94.4 %*	*70-130*		"	"	"	"	
Remed. Backfill (4H18001-03) Soil									
Benzene	**0.0352**	0.0250	mg/kg dry	25	EH42303	08/20/04	08/20/04	EPA 8021B	
Toluene	**0.171**	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.291**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.891**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.165**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*100 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**250**	10.0	mg/kg dry	1	EH41713	08/18/04	08/18/04	EPA 8015M	
Diesel Range Organics >C12-C35	**732**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**982**	10.0	"	"	"	"	"	"	

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Remed. Backfill (4H18001-03) Soil									
Surrogate: 1-Chlorooctane		*101 %*	*70-130*		*EH41713*	*08/18/04*	*08/18/04*	*EPA 8015M*	
Surrogate: 1-Chlorooctadecane		*106 %*	*70-130*		"	"	"	"	
Lab Comp. Bottom 1 - 5 (4H18001-04) Soil									
Benzene	**0.123**	0.0500	mg/kg dry	50	EH42303	08/20/04	08/20/04	EPA 8021B	
Toluene	**0.541**	0.0500	"	"	"	"	"	"	
Ethylbenzene	**0.946**	0.0500	"	"	"	"	"	"	
Xylene (p/m)	**2.81**	0.0500	"	"	"	"	"	"	
Xylene (o)	**0.385**	0.0500	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*120 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*111 %*	*80-120*		"	"	"	"	

Rice Operating Co.	Project: EME P-24	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	08/24/04 10:54

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bottom Comp. at 12' bgs (4H18001-01) Soil									
Chloride	**106**	20.0	mg/kg Wet	2	EH42308	08/18/04	08/23/04	SW 846 9253	
% Solids	**88.0**		%	1	EH41901	08/18/04	08/18/04	% calculation	
4 Wall Comp. (4H18001-02) Soil									
Chloride	ND	20.0	mg/kg Wet	2	EH42308	08/18/04	08/23/04	SW 846 9253	
% Solids	**95.0**		%	1	EH41901	08/18/04	08/18/04	% calculation	
Remed. Backfill (4H18001-03) Soil									
Chloride	ND	20.0	mg/kg Wet	2	EH42308	08/18/04	08/23/04	SW 846 9253	
% Solids	**92.0**		%	1	EH41901	08/18/04	08/18/04	% calculation	
Lab Comp. Bottom 1 - 5 (4H18001-04) Soil									
% Solids	**88.0**		%	1	EH41901	08/18/04	08/18/04	% calculation	

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Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH41713 - Solvent Extraction (GC)										
Blank (EH41713-BLK1)				Prepared: 08/17/04 Analyzed: 08/18/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*39.6*		*mg/kg*	*50.0*		*79.2*	*70-130*			
Surrogate: 1-Chlorooctadecane	*37.0*		"	*50.0*		*74.0*	*70-130*			
Blank (EH41713-BLK2)				Prepared: 08/17/04 Analyzed: 08/18/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*35.1*		*mg/kg*	*50.0*		*70.2*	*70-130*			
Surrogate: 1-Chlorooctadecane	*37.7*		"	*50.0*		*75.4*	*70-130*			
LCS (EH41713-BS1)				Prepared: 08/17/04 Analyzed: 08/19/04						
Gasoline Range Organics C6-C12	453	10.0	mg/kg wet	500		90.6	75-125			
Diesel Range Organics >C12-C35	466	10.0	"	500		93.2	75-125			
Total Hydrocarbon C6-C35	919	10.0	"	1000		91.9	75-125			
Surrogate: 1-Chlorooctane	*54.1*		*mg/kg*	*50.0*		*108*	*70-130*			
Surrogate: 1-Chlorooctadecane	*44.5*		"	*50.0*		*89.0*	*70-130*			
LCS (EH41713-BS2)				Prepared: 08/17/04 Analyzed: 08/19/04						
Gasoline Range Organics C6-C12	424	10.0	mg/kg wet	500		84.8	75-125			
Diesel Range Organics >C12-C35	520	10.0	"	500		104	75-125			
Total Hydrocarbon C6-C35	944	10.0	"	1000		94.4	75-125			
Surrogate: 1-Chlorooctane	*53.5*		*mg/kg*	*50.0*		*107*	*70-130*			
Surrogate: 1-Chlorooctadecane	*50.8*		"	*50.0*		*102*	*70-130*			
Calibration Check (EH41713-CCV1)				Prepared: 08/17/04 Analyzed: 08/18/04						
Gasoline Range Organics C6-C12	501		mg/kg	500		100	80-120			
Diesel Range Organics >C12-C35	546		"	500		109	80-120			
Total Hydrocarbon C6-C35	1050		"	1000		105	80-120			
Surrogate: 1-Chlorooctane	*59.5*		"	*50.0*		*119*	*70-130*			
Surrogate: 1-Chlorooctadecane	*57.1*		"	*50.0*		*114*	*70-130*			

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH41713 - Solvent Extraction (GC)										
Calibration Check (EH41713-CCV2)				Prepared: 08/17/04 Analyzed: 08/18/04						
Gasoline Range Organics C6-C12	459		mg/kg	500		91.8	80-120			
Diesel Range Organics >C12-C35	538		"	500		108	80-120			
Total Hydrocarbon C6-C35	997		"	1000		99.7	80-120			
Surrogate: 1-Chlorooctane	*59.7*		*"*	*50.0*		*119*	*70-130*			
Surrogate: 1-Chlorooctadecane	*55.4*		*"*	*50.0*		*111*	*70-130*			
Matrix Spike (EH41713-MS1)		**Source: 4H17008-01**		Prepared: 08/17/04 Analyzed: 08/18/04						
Gasoline Range Organics C6-C12	474	10.0	mg/kg dry	500	22.5	90.3	75-125			
Diesel Range Organics >C12-C35	654	10.0	"	500	147	101	75-125			
Total Hydrocarbon C6-C35	1130	10.0	"	1000	170	96.0	75-125			
Surrogate: 1-Chlorooctane	*55.8*		*mg/kg*	*50.0*		*112*	*70-130*			
Surrogate: 1-Chlorooctadecane	*54.8*		*"*	*50.0*		*110*	*70-130*			
Matrix Spike (EH41713-MS2)		**Source: 4H18005-01**		Prepared: 08/18/04 Analyzed: 08/19/04						
Gasoline Range Organics C6-C12	524	10.0	mg/kg dry	505	ND	104	75-125			
Diesel Range Organics >C12-C35	565	10.0	"	505	ND	112	75-125			
Total Hydrocarbon C6-C35	1090	10.0	"	1010	ND	108	75-125			
Surrogate: 1-Chlorooctane	*60.7*		*mg/kg*	*50.0*		*121*	*70-130*			
Surrogate: 1-Chlorooctadecane	*47.9*		*"*	*50.0*		*95.8*	*70-130*			
Matrix Spike Dup (EH41713-MSD1)		**Source: 4H17008-01**		Prepared: 08/17/04 Analyzed: 08/18/04						
Gasoline Range Organics C6-C12	475	10.0	mg/kg dry	500	22.5	90.5	75-125	0.211	20	
Diesel Range Organics >C12-C35	665	10.0	"	500	147	104	75-125	1.67	20	
Total Hydrocarbon C6-C35	1140	10.0	"	1000	170	97.0	75-125	0.881	20	
Surrogate: 1-Chlorooctane	*55.3*		*mg/kg*	*50.0*		*111*	*70-130*			
Surrogate: 1-Chlorooctadecane	*55.2*		*"*	*50.0*		*110*	*70-130*			
Matrix Spike Dup (EH41713-MSD2)		**Source: 4H18005-01**		Prepared: 08/18/04 Analyzed: 08/19/04						
Gasoline Range Organics C6-C12	522	10.0	mg/kg dry	505	ND	103	75-125	0.382	20	
Diesel Range Organics >C12-C35	562	10.0	"	505	ND	111	75-125	0.532	20	
Total Hydrocarbon C6-C35	1080	10.0	"	1010	ND	107	75-125	0.922	20	
Surrogate: 1-Chlorooctane	*61.1*		*mg/kg*	*50.0*		*122*	*70-130*			
Surrogate: 1-Chlorooctadecane	*51.5*		*"*	*50.0*		*103*	*70-130*			

Rice Operating Co.	Project: EME P-24	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	08/24/04 10:54

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH42303 - EPA 5030C (GC)										
Blank (EH42303-BLK1)				Prepared & Analyzed: 08/20/04						
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*86.1*		*ug/kg*	*100*		*86.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*91.1*		"	*100*		*91.1*	*80-120*			
LCS (EH42303-BS1)				Prepared & Analyzed: 08/20/04						
Benzene	88.5		ug/kg	100		88.5	80-120			
Toluene	87.1		"	100		87.1	80-120			
Ethylbenzene	87.5		"	100		87.5	80-120			
Xylene (p/m)	191		"	200		95.5	80-120			
Xylene (o)	96.2		"	100		96.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	*88.1*		"	*100*		*88.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*89.4*		"	*100*		*89.4*	*80-120*			
Calibration Check (EH42303-CCV1)				Prepared: 08/20/04 Analyzed: 08/23/04						
Benzene	89.2		ug/kg	100		89.2	80-120			
Toluene	86.5		"	100		86.5	80-120			
Ethylbenzene	82.2		"	100		82.2	80-120			
Xylene (p/m)	182		"	200		91.0	80-120			
Xylene (o)	91.3		"	100		91.3	80-120			
Surrogate: a,a,a-Trifluorotoluene	*85.9*		"	*100*		*85.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*89.5*		"	*100*		*89.5*	*80-120*			
Matrix Spike (EH42303-MS1)	**Source: 4H19007-01**			Prepared: 08/20/04 Analyzed: 08/23/04						
Benzene	91.6		ug/kg	100	ND	91.6	80-120			
Toluene	90.5		"	100	ND	90.5	80-120			
Ethylbenzene	89.5		"	100	ND	89.5	80-120			
Xylene (p/m)	194		"	200	ND	97.0	80-120			
Xylene (o)	95.9		"	100	ND	95.9	80-120			
Surrogate: a,a,a-Trifluorotoluene	*88.5*		"	*100*		*88.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*82.7*		"	*100*		*82.7*	*80-120*			

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME P-24	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	08/24/04 10:54

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH42303 - EPA 5030C (GC)										
Matrix Spike Dup (EH42303-MSD1)	**Source: 4H19007-01**			Prepared: 08/20/04 Analyzed: 08/23/04						
Benzene	92.3		ug/kg	100	ND	92.3	80-120	0.761	20	
Toluene	91.2		"	100	ND	91.2	80-120	0.770	20	
Ethylbenzene	91.4		"	100	ND	91.4	80-120	2.10	20	
Xylene (p/m)	198		"	200	ND	99.0	80-120	2.04	20	
Xylene (o)	99.2		"	100	ND	99.2	80-120	3.38	20	
Surrogate: a,a,a-Trifluorotoluene	*87.0*		"	*100*		*87.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*87.7*		"	*100*		*87.7*	*80-120*			

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME P-24	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	08/24/04 10:54

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH41901 - General Preparation (Prep)										
Blank (EH41901-BLK1)				Prepared & Analyzed: 08/18/04						
% Solids	100		%							
Duplicate (EH41901-DUP1)		Source: 4H18001-01		Prepared & Analyzed: 08/18/04						
% Solids	88.0		%		88.0			0.00	20	
Batch EH42308 - Water Extraction										
Blank (EH42308-BLK1)				Prepared: 08/18/04 Analyzed: 08/23/04						
Chloride	ND	20.0	mg/kg Wet							
Matrix Spike (EH42308-MS1)		Source: 4H18002-01		Prepared: 08/18/04 Analyzed: 08/23/04						
Chloride	1170	20.0	mg/kg Wet	500	702	93.6	80-120			
Matrix Spike Dup (EH42308-MSD1)		Source: 4H18002-01		Prepared: 08/18/04 Analyzed: 08/23/04						
Chloride	1160	20.0	mg/kg Wet	500	702	91.6	80-120	0.858	20	
Reference (EH42308-SRM1)				Prepared: 08/18/04 Analyzed: 08/23/04						
Chloride	4940		mg/kg	5000		98.8	80-120			

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME P-24	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Roy Rascon	08/24/04 10:54

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Raland K Tuttle Date: 8-24-04

Raland K. Tuttle, QA Officer
Celey D. Keene, Lab Director, Org. Tech Director
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sara Molina, Chemist
Sandra Biezugbe, Lab Tech.

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Roy Rascon
Company Name: RICE Operating
Company Address: 122 W. Taylor
City/State/Zip: Hobbs, NM 88240
Telephone No: (505) 393-9174
Fax No: (505) 397-1471
Sampler Signature: Joe Gratt

Project Name: EME P-24
Project #:
Project Loc: P-24
PO #: 510

4H18001

Analyze For: TCLP: / TOTAL:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers 4oz glass	Ice	HNO3	HCl	NaOH	H2SO4	None	Other (Specify)	Water	Sludge	Soil	Other (specify):	TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030							RUSH TAT (Pre-Schedule)	Standard TAT
-01	Bottom Comp at 12'bgs	8/12/04	2:15	1	X									X		X			X				X								
-02	4 WALL Comp	8/12/04	2:00	1	X									X		X			X				X								
-03	REMD BACKfill	8/12/04	2:15	1	X									X		X			X				X								
-04	Bottom #1 (Field)	8/12/04	2:02	1	X									X									X								
	Bottom #2 (Field)	8/12/04	2:05	1	X																										
	Bottom #3 (Field)	8/12/04	2:07	1	X																										
	Bottom #4 (Field)	8/12/04	2:09	1	X																										
	Bottom #5 (Field)	8/12/04	2:11	1	X																										

Special Instructions:
Bottom #1, #2, #3, #4, #5 (Composite in lab run BTEX only)

Sample Containers Intact? Y N
Temperature Upon Receipt:
Laboratory Comments:
Rec 0.5°C

Relinquished by:	Date	Time	Received by:	Date	Time
Joe Gratt	8/16/04	17:00	C Hayes	8/17	17:00
Relinquished by: C Hayes	8/17	19:00	Received by ELOT: [illegible signature]	8-17-04	19:00

Environmental Lab of Texas
Variance / Corrective Action Report – Sample Log-In

Client: Rice Operating Co.

Date/Time: 08-18-04 @ 0830

Order #: 4H18001

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	(Yes)	No	0.5 C
Shipping container/cooler in good condition?	(Yes)	No	
Custody Seals intact on shipping container/cooler?	Yes	No	(Not present)
Custody Seals intact on sample bottles?	Yes	No	(Not present)
Chain of custody present?	(Yes)	No	
Sample Instructions complete on Chain of Custody?	(Yes)	No	
Chain of Custody signed when relinquished and received?	(Yes)	No	
Chain of custody agrees with sample label(s)	(Yes)	No	
Container labels legible and intact?	(Yes)	No	
Sample Matrix and properties same as on chain of custody?	(Yes)	No	
Samples in proper container/bottle?	(Yes)	No	
Samples properly preserved?	(Yes)	No	
Sample bottles intact?	(Yes)	No	
Preservations documented on Chain of Custody?	(Yes)	No	
Containers documented on Chain of Custody?	(Yes)	No	
Sufficient sample amount for indicated test?	(Yes)	No	
All samples received within sufficient hold time?	(Yes)	No	
VOC samples have zero headspace?	(Yes)	No	Not Applicable

Other observations:

_____

_____

_____

Variance Documentation:

Contact Person: - _____ Date/Time: _____ Contacted by: _____

Regarding:

_____

_____

_____

Corrective Action Taken:

_____

_____

_____

_____

_____

_____

_____

_____

1 load clean out

Manifest # 10722

SOUTH MONUMENT SURFACE WASTE FACILITY
LANDFARM - DIRT SALES
(505) 392-1050 WORK (505) 390-3665 CELL (505) 391-8391 HOME

JOE GATTS

Rice Operating — EME P-24 u/L Sec 24 T-20S R-36E
LEASE OPERATOR **ORIGINATING LOCATION**

TRANSPORTER NAME & ADDRESS
RWI

DESCRIPTION OF WASTE	**QUANTITY**
Non-Hazardous Hydrocarbons	12 YDS.

FACILITY CONTACT:
Gerry Walton — 8-12-04
SIGNATURE OF CONTACT **DATE**

CELL NUMBER MATERIAL PLACED IN: B-3

NAME OF TRANSPORTER (DRIVER):
Thomas R. Kramer — 8-12-04
SIGNATURE OF DRIVER **DATE**

DISPOSAL SITE
South Monument Surface Waste Facility — **PERMIT #NM-01-0032**
P. O. Box 418
Hobbs, NM 88241-0418 — **505-390-3665 CELL**
S25 T20S R36E N/2 NE/4 — **505-391-8391 HOME**

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations; exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C regulations; and not mixed with non-exempt waste."

Gerry Walton — 8-12-04
FACILITY REPRESENTATIVE **DATE**

1 load clean out

Manifest # 10723

SOUTH MONUMENT SURFACE WASTE FACILITY
LANDFARM - DIRT SALES
(505) 392-1050 WORK (505) 390-3665 CELL (505) 391-8391 HOME

JOE GATTS

Rice Operating — EME P-24 UL/P Sec 24 T-20S R36E

LEASE OPERATOR — **ORIGINATING LOCATION**

TRANSPORTER NAME & ADDRESS

RWI

DESCRIPTION OF WASTE	**QUANTITY**
Non-Hazardous Hydrocarbons	12 YDS.

FACILITY CONTACT:

[signature] — 8-12-04

SIGNATURE OF CONTACT — **DATE**

CELL NUMBER MATERIAL PLACED IN: B-3

NAME OF TRANSPORTER (DRIVER):

[signature] — 8-12-04

SIGNATURE OF DRIVER — **DATE**

DISPOSAL SITE
South Monument Surface Waste Facility
P. O. Box 418
Hobbs, NM 88241-0418
S25 T20S R36E N/2 NE/4

PERMIT #NM-01-0032

505-390-3665 CELL
505-391-8391 HOME

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations; exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C regulations; and not mixed with non-exempt waste."

[signature] — 8-12-04

FACILITY REPRESENTATIVE — **DATE**

1 load clean out

Manifest # 10724

SOUTH MONUMENT SURFACE WASTE FACILITY
LANDFARM - DIRT SALES
(505) 392-1050 WORK (505) 390-3665 CELL (505) 391-8391 HOME

JOE GATTS
Rice Operating — FME P-24 u/l P Sec 24 T-20s R-36E
LEASE OPERATOR **ORIGINATING LOCATION**

TRANSPORTER NAME & ADDRESS
RWI

DESCRIPTION OF WASTE	**QUANTITY**
Non-Hazardous Hydrocarbons	12 YDS.

FACILITY CONTACT:
Gregg Salter — 8-12-04
SIGNATURE OF CONTACT **DATE**

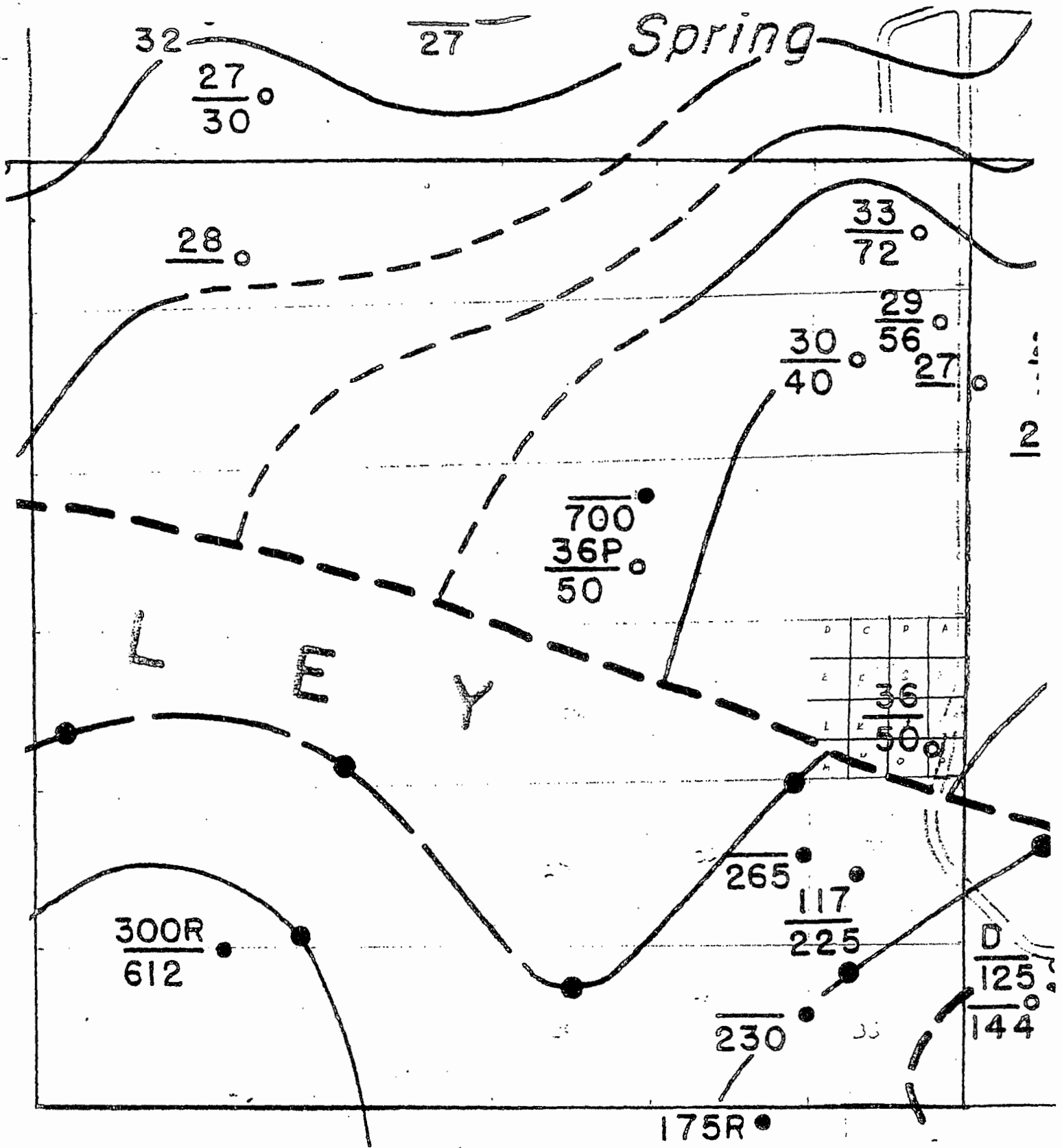
CELL NUMBER MATERIAL PLACED IN: B-3

NAME OF TRANSPORTER (DRIVER):
Glenn R. Kramer — 8-12-04
SIGNATURE OF DRIVER **DATE**

DISPOSAL SITE
South Monument Surface Waste Facility — **PERMIT #NM-01-0032**
P. O. Box 418
Hobbs, NM 88241-0418 — **505-390-3665 CELL**
S25 T20S R36E N/2 NE/4 — **505-391-8391 HOME**

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations; exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C regulations; and not mixed with non-exempt waste."

Gregg Salter — 8-12-04
FACILITY REPRESENTATIVE **DATE**



Enlarged from Plate 2 "Groundwater Map of Southern Lea County, New Mexico"
Map

from USGS book "Geology + Groundwater Conditions in South Lea County, New Mexico"

1961

Current Photodocumentation

RICE *Operating Company* (ROC)
112 West Taylor Hobbs, NM 88240
Phone: (575) 393-9174 Fax: (575) 397-1471

EME Jct. P-24 (1R427-154)

UL/P, Section 24, T20S, R36E

Facing north 4/23/2013

Facing west 4/23/2013

Hansen, Edward J., EMNRD

From: Laura Pena <lpena@riceswd.com>
Sent: Thursday, September 05, 2013 3:43 PM
To: Hansen, Edward J., EMNRD
Cc: Hack Conder; Katie Jones
Subject: RE: ROC - EME Jct. P-24 (1R427-154) Additional Information
Attachments: EME Jct. P-24.jpg; EME Jct. O-24 (1R427-07) Letter of No Groundwater 9.24.10.pdf; EME K-35 (1R427-01) Letter of No Groundwater 1.5.13.pdf; EME P-27 EOL (1R427-10) Letter of No Groundwater 6.10.11.pdf; EME Jct. D-25 (1R427-08) Letter of No Groundwater 11.1.10.pdf

Mr. Hansen,

The Jct. P-24 (1R427-154) site is located immediately adjacent to an area of no groundwater. A plat showing this site in relation to the other sites proven to have no groundwater has been attached. The closest site is EME Jct. O-24 (1R427-07), which is approximately 1,012 feet to the west of the Jct. P-24 site. A soil bore was drilled to a depth of 70 ft bgs, and the red bed was encountered at approximately 60 ft bgs. After a 48 hour holdover period, the bore was gauged by Harrison & Cooper, Inc., and the moisture content at that depth was non-detectable. A letter of no groundwater from Harrison & Cooper, Inc. for the EME Jct. O-24 is attached. Letters of no groundwater for three additional sites in the area [EME Jct. D-25 (1R427-08), EME P-27 EOL (1R427-10), and EME K-35 (1R427-01)] are also attached. In addition, an updated study of NM OSE records indicate that no groundwater would likely be encountered within a half mile radius.

Based on the site not having groundwater, chloride, TPH and BTEX all fall below NMOCD guidelines provided in the NMOCD-approved Revised Junction Box Upgrade Work Plan. As such, we respectfully request termination of this regulatory file, or similar closure status. Vegetation has rebounded at the site, so no re-vegetation efforts are needed. Vegetation will act as an evapo-transpiration barrier that will also inhibit the downward migration of residual chlorides and hydrocarbons. Plants capture water through their roots and so reduce the amount of water infiltrating below the root zone.

If you have any questions, please feel free to contact Hack Conder at 575-393-2967.

Thank you,
Laura Flores

From: Laura Pena
Sent: Tuesday, August 27, 2013 2:09 PM
To: Katie Jones
Subject: FW: Remediation Plan (1R427-154) Further Information Required - ROC EME Jct P-24 Site

Mr. Hansen,

In response to your request for further delineation, a plat showing this site in relation to other nearby site locations within the EME system with no groundwater has been attached. The closest site is EME Jct. O-24 (1R427-07), which is approximately 1,012 feet to the west of the Jct. P-24 site. A soil bore was drilled to a depth of 70 ft bgs, and the red bed was encountered at approximately 60 ft bgs. After a 48 hour holdover period, the bore was gauged by Harrison & Cooper, Inc., and the moisture content at that depth was non-

detectable. A letter of no groundwater from Harrison & Cooper, Inc. for the EME Jct. O-24 is attached. Letters of no groundwater for three additional sites in the area [EME Jct. D-25 (1R427-08), EME P-27 EOL (1R427-10), and EME K-35 (1R427-01)] are also attached.

Based on the site not having groundwater, chloride, TPH and BTEX all fall below NMOCD guidelines provided in the NMOCD-approved Revised Junction Box Upgrade Work Plan. As such, we respectfully request termination of this regulatory file, or similar closure status. Vegetation has rebounded at the site, so no re-vegetation efforts are needed. Vegetation will act as an evapo-transpiration barrier that will also inhibit the downward migration of residual chlorides and hydrocarbons. Plants capture water through their roots and so reduce the amount of water infiltrating below the root zone.

If you have any questions, please feel free to contact Hack Conder at 575-393-2967.

Thank you,
Laura Flores

From: Hansen, Edward J., EMNRD [mailto:edwardj.hansen@state.nm.us]
Sent: Tuesday, August 27, 2013 9:17 AM
To: Hack Conder
Cc: Leking, Geoffrey R, EMNRD; Katie Jones; Laura Pena
Subject: Remediation Plan (1R427-154) Further Information Required - ROC EME Jct P-24 Site

RE: Termination Request
for the Rice Operating Company's
EME Jct P-24 Site
Unit Letter P, Section 24, 20S, R36E, NMPM, Lea County, New Mexico
Remediation Plan (1R427-154) Further Information Required

Dear Mr. Conder:

The New Mexico Oil Conservation Division (OCD) has received Rice Operating Company's (ROC) termination request for the above-referenced site (dated August 9, 2013). The termination request indicates that additional information is required. Therefore, the OCD cannot approved the termination request for the remediation plan at this time:

ROC must further delineate vertically in the vadose zone for possible BTEX and TPH release at the site. In addition, please submit a vertical delineation report to the OCD within 90 days.

If you have any questions regarding this matter, please contact me at 505-476-3489.

Edward J. Hansen
Hydrologist
Environmental Bureau

HARRISON & COOPER, INC.

Drilling & Pump Professionals

7414 85th Street, Lubbock, Texas 79424-4951

P.O. Box 96, Wolfforth, Texas 79382-0096

Ph: (806) 866-4026 Fax: (806) 866-4044 hcidrill.com

January 5, 2012

Rice Operating
112 W. Taylor
Hobbs, NM 88240

Attn: Lara Weinheimer

RE: EME K-35
Bore Hole Condition

To whom it may concern:

On December 12, 2011, Harrison and Cooper were contracted by Rice Operating to drill and sample a soil boring at the subject site. The soil boring was drilled to approximately 140 feet in an effort to determine whether or not a saturated interval existed. After a forty-eight hour holdover time the moisture content at that depth was NON-detectable.

If any questions arise from this issue, do not hesitate to contact a representative with Harrison and Cooper.

Sincerely,

Kenny Cooper
Operations Manager

Copies: File
Email (Lara Weinheimer)

HARRISON & COOPER, INC.

Drilling & Pump Professionals

7414 85th Street, Lubbock, Texas 79424-4951

P.O. Box 96, Wolfforth, Texas 79382-0096

Ph: (806) 866-4026 Fax: (806) 866-4044 harrisoncooper-drilling.com

November 1, 2010

Rice Operating Co.
112 W. Taylor
Hobbs, NM 88240

Attn: Lara Weinheimer

RE: EME Jct. D-25, Monument, NM
Bore Hole Condition

To whom it may concern:

On October 21, 2010, Harrison and Cooper were contracted by Rice Operating to drill and sample a soil boring at the subject site. The soil boring was drilled to approximately 90 feet in an effort to determine whether or not a saturated interval existed. After a fourty-eight hour holdover time the moisture content at that depth was NON-detectable.

If any questions arise from this issue, do not hesitate to contact a representative with Harrison and Cooper.

Sincerely,

Kenny Cooper
Operations Manager

Copies: File
Email (Lara Weinheimer)

HARRISON & COOPER, INC.

Drilling & Pump Professionals

7414 85th Street, Lubbock, Texas 79424-4951

P.O. Box 96, Wolfforth, Texas 79382-0096

Ph: (806) 866-4026 Fax: (806) 866-4044 harrisoncooper-drilling.com

September 24, 2010

Rice Operating Co.
112 W. Taylor
Hobbs, NM 88240

Attn: Lara Weinheimer

RE: EME Jct. O-24, Monument, NM
Bore Hole Condition

To whom it may concern:

On September 14, 2010, Harrison and Cooper were contracted by Rice Operating to drill and sample a soil b oring at t he subject site. The soil boring was drilled to approximately 70 feet in an effort to determine whether or not a saturated interval existed. After a forty-eight hour holdover time, the moisture content at that depth was NON-detectable.

If an y questions arise from this issue, do not hesitate to contact a representative with H arrison an d Cooper.

Sincerely,

Kenny Cooper
Operations Manager

Copies: File
Email (Lara Weinheimer)

Arc Environmental
P. O. Box 1772
Lovington, New Mexico 88260
(575) 631-9310
Rozanne Johnson ~ rozanne@valornet.com

June 10, 2011

Mr. Hack Conder
RICE Operating Company
112 West Taylor
Hobbs, New Mexico 88240

Re: EME P-27 EOL

Mr. Conder,

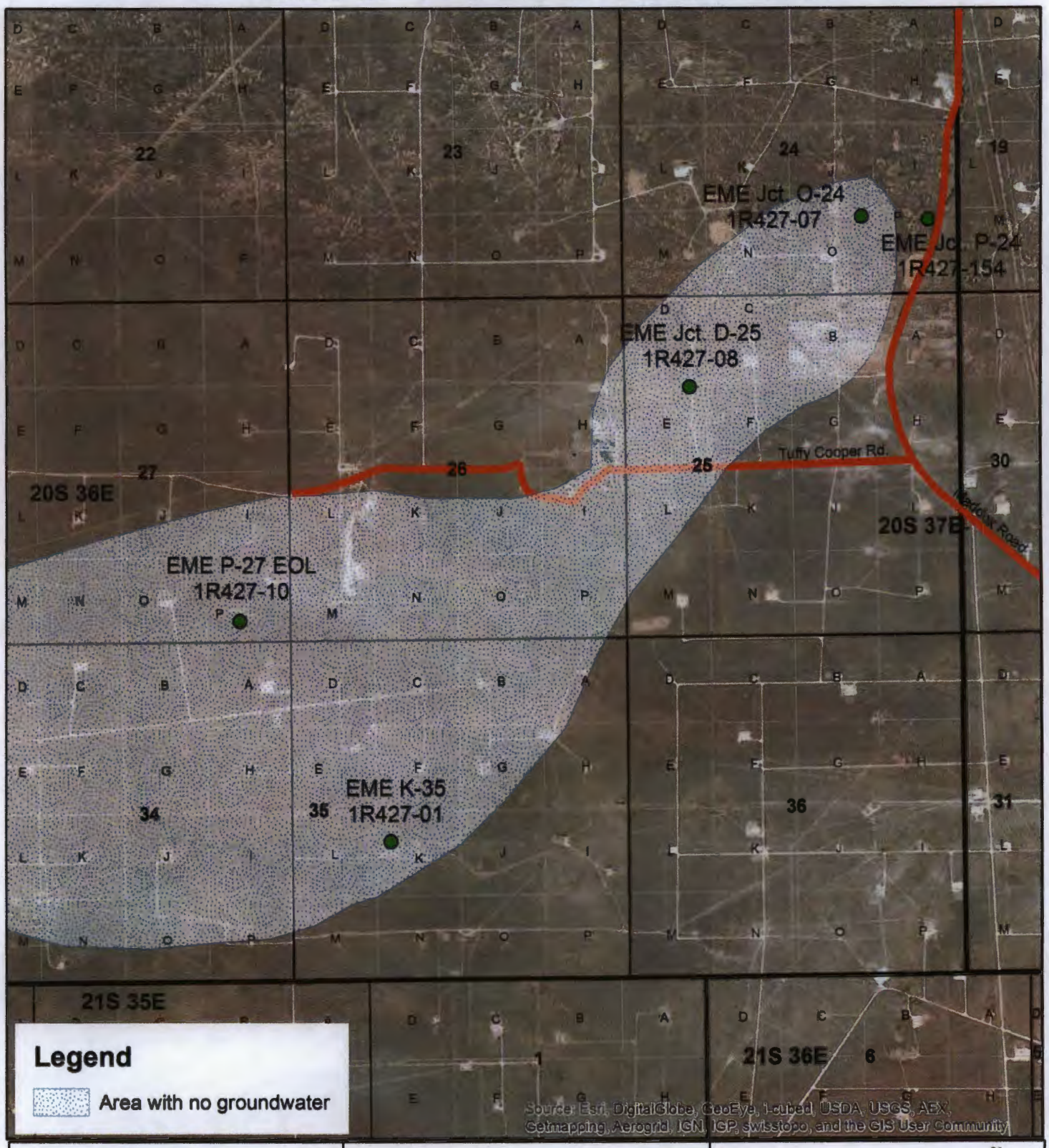
On Tuesday June 7, 2011 soil bore #1 at the EME P-27 EOL, Lea County T20S, R36E, Sec 27 Unit Letter P was checked with a Solinist Water Level Meter for water accumulation within the borehole. The meter indicated no water within the borehole at a total depth of 120.35 feet.

Sincerely,
Arc Environmental

Rozanne Johnson
Rozanne Johnson

Electronic Copy: Hack Conder
Katie Jones

Sites in Area of No Groundwater



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

RECS

EME Jct. P-24

LEGALS: UL/P sec. 24
T-20-S R-37-E
LEA COUNTY, NM

NMOCD Case #: 1R427-154

N
W E
S

0 1,400 2,800
Feet

Drawing date: 8/22/13
Drafted by: L. Weinheimer

MULTIMED V1.01 DATE OF CALCULATIONS: 9-SEP-2013 TIME: 12:15: 0

U. S. E N V I R O N M E N T A L P R O T E C T I O N A G E N C Y

E X P O S U R E A S S E S S M E N T

M U L T I M E D I A M O D E L

MULTIMED (Version 1.50, 2005)

Switched to Stehfest algorithm to avoid numerical problems
with Convolution algorithm. Problems were caused by
high source decay rate. Everything ok now, execution continuing...

1

Run options
--- -------

EME Jct P-24

1R427-154 (ejh)
Chemical simulated is Benzene

Option Chosen	Saturated and unsaturated zone models
Run was	DETERMIN

Infiltration Specified By User: 3.050E-02 m/yr
Run was transient
Well Times: Entered Explicitly
Reject runs if Y coordinate outside plume
Reject runs if Z coordinate outside plume
Gaussian source used in saturated zone model

1

1

UNSATURATED ZONE FLOW MODEL PARAMETERS
(input parameter description and value)

NP	- Total number of nodal points	240

NMAT - Number of different porous materials 1
KPROP - Van Genuchten or Brooks and Corey 1
IMSHGN - Spatial discretization option 1
NVFLAYR - Number of layers in flow model 1

OPTIONS CHOSEN
------- ------
Van Genuchten functional coefficients
User defined coordinate system
1

Layer information

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
1	31.00	1

DATA FOR MATERIAL 1
---- --- --------
VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.

	Air entry pressure head	m	CONSTANT	0.700	-999.
-999.	-999.				
	Depth of the unsaturated zone	m	CONSTANT	31.0	0.000
0.000	0.000				

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent,EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used	1
NTSTPS	- Number of time values concentration calc	40
DUMMY	- Not presently used	1
ISOL	- Type of scheme used in unsaturated zone	1
N	- Stehfest terms or number of increments	18
NTEL	- Points in Lagrangian interpolation	3
NGPTS	- Number of Gauss points	104

```
 NIT    - Convolution integral segments                  2
 IBOUND - Type of boundary condition                     3
 ITSGEN - Time values generated or input                 1
 TMAX   - Max simulation time              --          0.0
 WTFUN  - Weighting factor                 --          1.2


 OPTIONS CHOSEN
 ------- ------
 Stehfest numerical inversion algorithm
 Exponentially decaying continuous source
 Computer generated times for computing concentrations
1
```

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS MEAN	PARAMETERS STD DEV	LIMITS MIN	LIMITS MAX
Thickness of layer	m	CONSTANT	31.0	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	l/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	l/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm2/s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.

	Mole fraction of solute	--	CONSTANT	-999.	-999.
-999.	-999.				
	Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.
-999.	-999.				
	Henry`s law constant	atm-m^3/M	CONSTANT	-999.	-999.
-999.	-999.				
	Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000
0.000	1.00				
	Not currently used		CONSTANT	0.000	0.000
0.000	0.000				
	Not currently used		CONSTANT	0.000	0.000
0.000	0.000				

1

SOURCE SPECIFIC VARIABLES

	VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
LIMITS					
				MEAN	STD DEV
MIN	MAX				
	Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.
-999.	-999.				
	Area of waste disposal unit	m^2	DERIVED	251.	-999.
-999.	-999.				
	Duration of pulse	yr	DERIVED	50.0	-999.
-999.	-999.				
	Spread of contaminant source	m	DERIVED	-999.	-999.
-999.	-999.				
	Recharge rate	m/yr	CONSTANT	0.000	-999.
-999.	-999.				
	Source decay constant	1/yr	CONSTANT	0.500E-01	0.000
0.000	0.000				
	Initial concentration at landfill	mg/l	CONSTANT	0.127	-999.
-999.	-999.				

Length scale of facility	m	CONSTANT	15.9	-999.	-999.
-999.	-999.				
Width scale of facility	m	CONSTANT	15.9	-999.	-999.
-999.	-999.				
Near field dilution		DERIVED	1.00	0.000	0.000
0.000	1.00				

1

AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.

Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.
Temperature of aquifer	C	CONSTANT	20.0	-999.	-999.
pH	--	CONSTANT	7.00	-999.	-999.
Organic carbon content (fraction)		CONSTANT	0.000	-999.	-999.
Well distance from site	m	CONSTANT	1.00	-999.	-999.
Angle off center	degree	CONSTANT	0.000	-999.	-999.
Well vertical distance	m	CONSTANT	0.000	-999.	-999.

1

TIME	CONCENTRATION
0.100E+01	0.00000E+00
0.260E+02	0.00000E+00
0.510E+02	0.00000E+00
0.760E+02	0.00000E+00
0.101E+03	0.00000E+00
0.126E+03	0.00000E+00
0.151E+03	0.82822E-03
0.176E+03	0.40396E-02
0.201E+03	0.76463E-02
0.226E+03	0.96864E-02
0.251E+03	0.97788E-02
0.276E+03	0.83353E-02
0.301E+03	0.63013E-02
0.326E+03	0.42417E-02
0.351E+03	0.25197E-02