

1R - 427-168

WORKPLANS

DATE:

10-21-09



Infrastructure, buildings, environment, communications

Ed Hansen
New Mexico Oil Conservation Division
1220 So. Saint Francis Drive
Santa Fe, New Mexico 87505

Certified Mail Receipt No. 7002 2410 0001 5813 3791

Subject:

Investigation and Characterization Plan Report and Corrective Action Proposal
Eunice Monument Eumont (EME) Jct. F-18, NMOCD Case #1R 427-16
T20S, R37E, Section 18, Unit F, Eunice, Lea County, New Mexico

Dear Mr. Hansen,

RICE Operating Company (ROC) has retained ARCADIS to address potential environmental concerns at the above-referenced site. ROC is the service provider (agent) for the Eunice Monument Eumont (EME) SWD System and has no ownership of any portion of the pipeline, well, or facility. The System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis. Environmental projects of this magnitude require System Partner AFE approval and work begins as funds are received.

SITE HISTORY AND BACKGROUND

ROC disclosed potential groundwater impact at the site to New Mexico Oil, Conservation Division (NMOCD) via e-mail on October 19, 2004. A disclosure report was submitted to NMOCD with all of the ROC 2004 Junction Box Reports in March 2005 per the ROC Junction Box Upgrade Workplan. The site location is shown in Figure 1.

The junction box F-18 was eliminated and replaced with poly line that bypasses this junction. Initial delineation began on August 16, 2004 and was completed on August 24, 2004 with a backhoe by trenching to 12 feet below ground surface (bgs). An area of 25 x 15 x 12 ft-deep was excavated and backfilled with blended soils to a depth 6 feet bgs. A one-foot thick compacted clay barrier was installed to inhibit downward chloride migration. The excavated area was then backfilled with the remaining blended excavated soil. The disturbed surface has been seeded with a blend of native vegetation and monitored for growth.

Soil samples were analyzed in the field for chlorides using field-adapted Method 4500-ClB and screened in the field using a photoionization detector (PID).

Part of a bigger picture

1R427-168

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RECEIVED OCT
2009 OCT 26 A 11:00
Date: October 21, 2009

Contact:

Sharon Hall

Phone:

432 687-5400

Email:

shall@arcadis-us.com

Confirmation samples were collected from the bottom, side walls, and remediated backfill and sent to Environmental Lab of Texas for Total Petroleum Hydrocarbons (TPH) and Chloride analysis. PID readings were all low and laboratory analysis confirmed gasoline range organics (GRO) and diesel range organics (DRO) were not detected (laboratory analytical results, attached).

Based on the results of the soil sampling analytical results, elevated chloride concentrations are present at the subject site.

The source of this impact has been removed. There is no longer a threat of compounded impacts at this site because the junction has been eliminated and replaced with poly line that bypasses this junction.

On behalf of ROC, ARCADIS submitted an Investigation Characterization Plan (ICP) to NMOCD on July 6, 2007. The ICP was approved by NMOCD on August 6, 2007 and proposed three tasks:

INVESTIGATION AND CHARACTERIZATION PLAN

Task 1-Collect Regional Hydrogeologic Data

A one-half mile water well inventory that includes a review of water well records listed on the New Mexico State Engineer Office and United States Geological Survey (USGS) websites and windmills indicated on applicable USGS topographic maps.

Chloride impacted groundwater has been reported regionally in this area near the towns of Eunice and Monument since as early as 1952 (*Geology and Ground-Water Conditions in Southern Lea County, New Mexico* [Groundwater Report 6 by A. Nicholson, Jr. and A. Clebsch, Jr.; United States Geological Society]).

Task 2-Evaluate Concentrations of Constituents of Concern in Soil and Groundwater

Installation of one soil boring at the former junction box location and one soil boring in each direction (north, south, east and west) of the excavated area. A monitoring well was not installed because the field chloride concentrations decreased with depth.

Task 3-Evaluate Potential Flux from the Vadose Zone to Groundwater

As proposed in the ICP, the information gathered from Tasks 1 and 2 would be evaluated and utilized to design a groundwater remedy if needed. The groundwater remedy that offers the greatest environmental benefit while causing the least environmental impairment would be selected. If the evaluation demonstrated that

residual constituents pose no threat to groundwater quality, only a surface restoration plan would be proposed. Such recommendations and findings would be presented to NMOCD in a subsequent Corrective Action Plan (CAP). When evaluating any proposed remedy or investigative work, ROC would confirm that there is a reasonable relationship between the benefits created by the proposed remedy or assessment and the economic and social costs.

ICP INVESTIGATION RESULTS

Five soil borings were drilled at the site on March 5, 2009 (Figure 2). The soil borings were drilled to a depth of 25 to 28 feet bgs. Soil samples collected from the borings became moist at a depth of 20 to 25 feet bgs. The soil borings were filled with bentonite chips to ground surface.

Laboratory and field chloride analysis confirm that chloride concentrations in soil decline at depth in SB-1, SB-2, SB-3, SB-4 and SB-5 (Table 1). Overall, chloride concentrations in soil samples collected from these borings declined to concentrations of 720 mg/kg, 441 mg/kg, 201 mg/kg, 360 mg/kg and 229 mg/kg, respectively (Figure 2).

RECOMMENDATIONS

Based on the fact that elevated chloride concentrations in groundwater have been reported in the area since the early 1950s, we propose that monitor wells not be drilled at this site. The source of potential impact to this site has been removed. There is no longer a threat of compounded impacts at this site because the junction has been eliminated and replaced with poly line that bypasses this junction. Impacted soils near the source have been excavated to a depth of 12 feet bgs and a 15 by 25 foot compacted clay liner has been installed (Figures 2 and 3) to inhibit downward migration of chlorides.

We propose extending the existing infiltration barrier as shown in Figure 3. The infiltration barrier will consist of a 20-mil poly liner and will measure approximately 40 feet by 47 feet. Soils above the liner will be replaced in a manner to support native vegetation and the site will be seeded with native grasses.

Your approval of this Corrective Action Proposal will be appreciated.

Very Truly Yours,

ARCADIS U.S., Inc.

ARCADIS

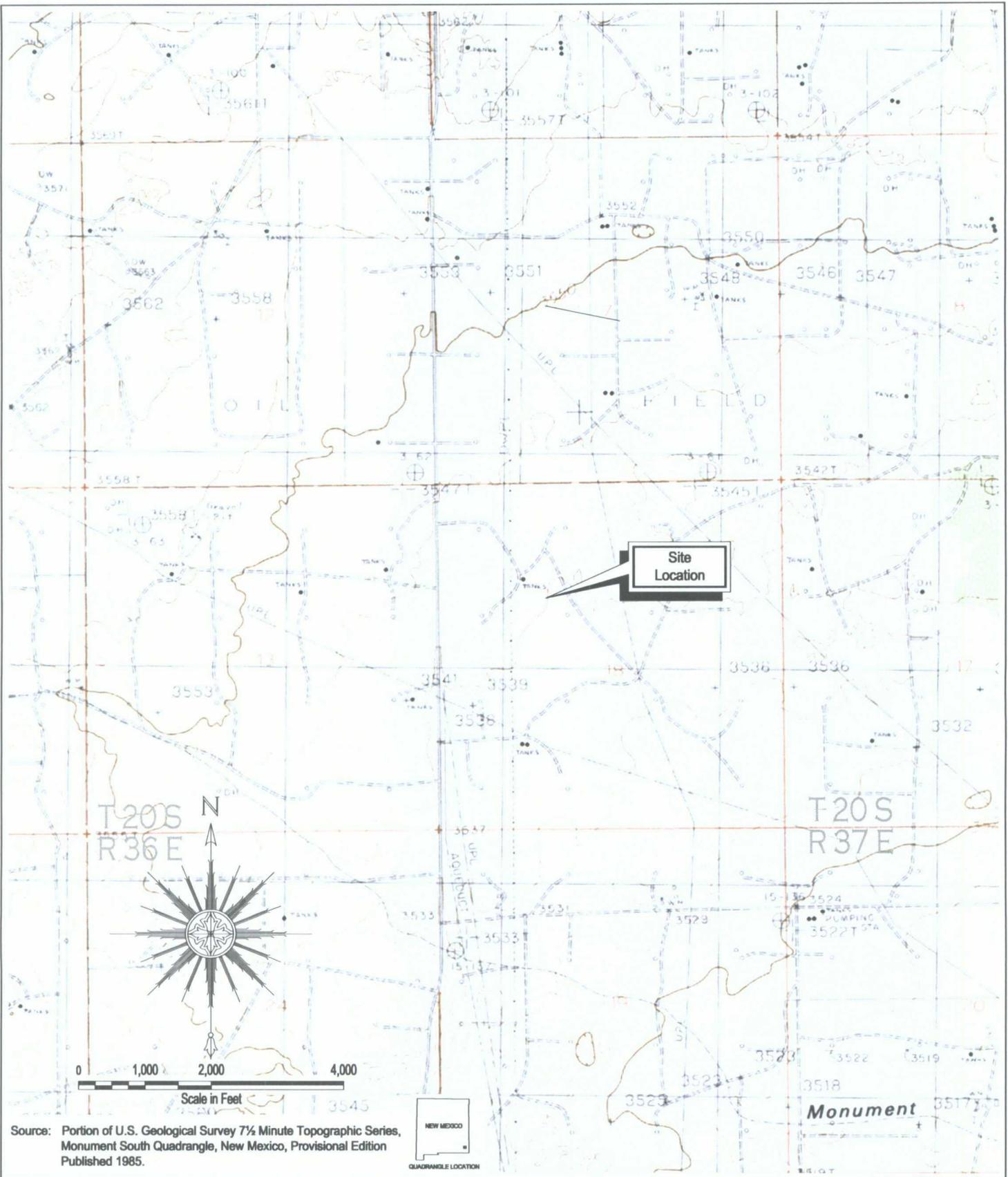
Ed Hansen
October 21, 2009

Sharon E. Hall

Sharon E. Hall
Associate Vice President

Copies:
Hack Conder- Rice Operating Company

Attachments:
Figures 1-3
Table 1
Soil Boring Logs
Laboratory Report



Source: Portion of U.S. Geological Survey 7½ Minute Topographic Series, Monument South Quadrangle, New Mexico, Provisional Edition Published 1985.



Area Manager A. Schmidt
Project Manager S. Hall
Task Manager R. Nanny
Technical Review S. Tischer



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Rice Operating Company
Eunice Monument Eumont (EME) SWD System – Jct. F-18

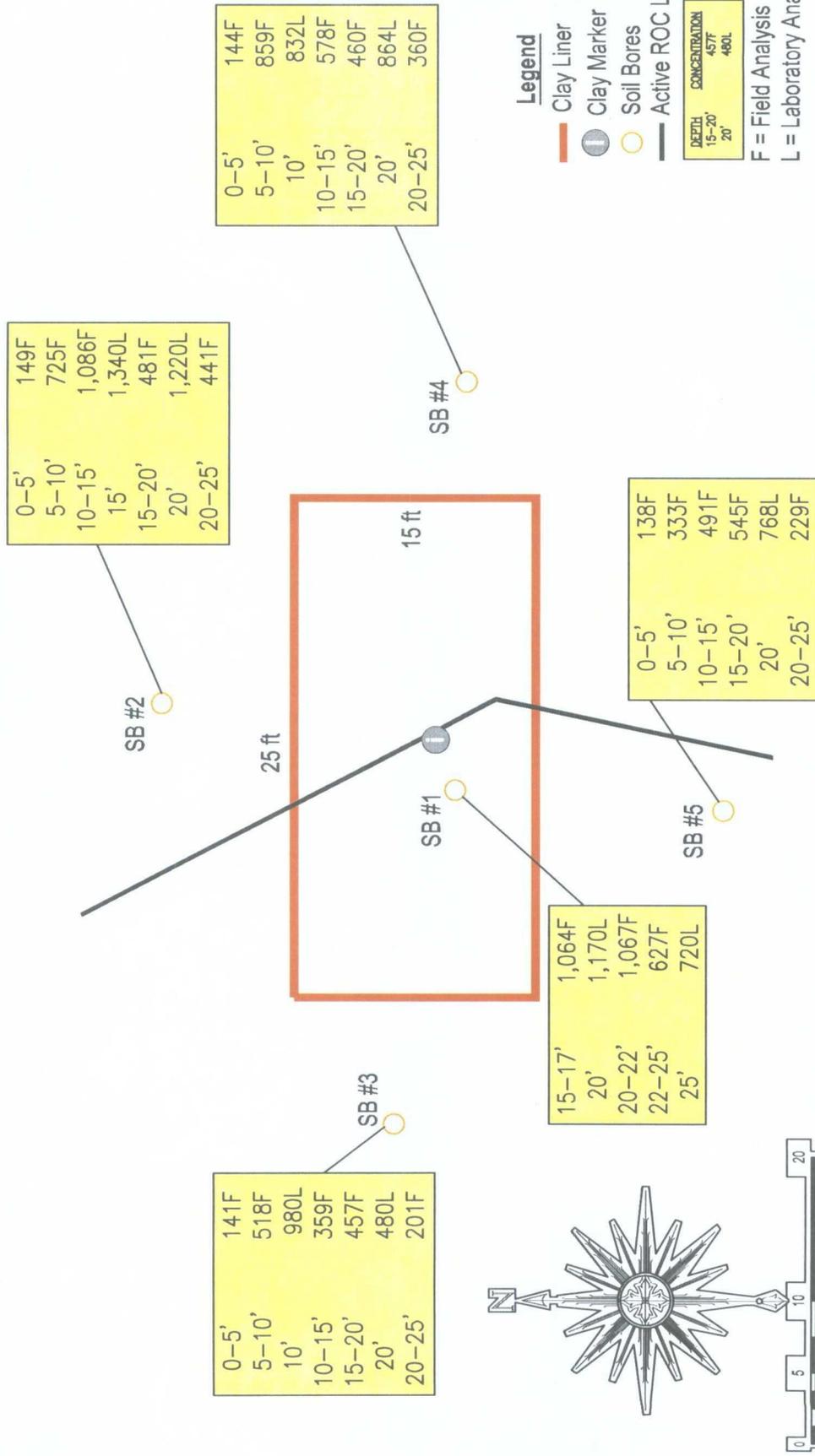
Site Location Map

Lea County, New Mexico

Project Number MT000911.0001
Drawing Date 27 November 2006
Figure 1

EME Jct. F-18

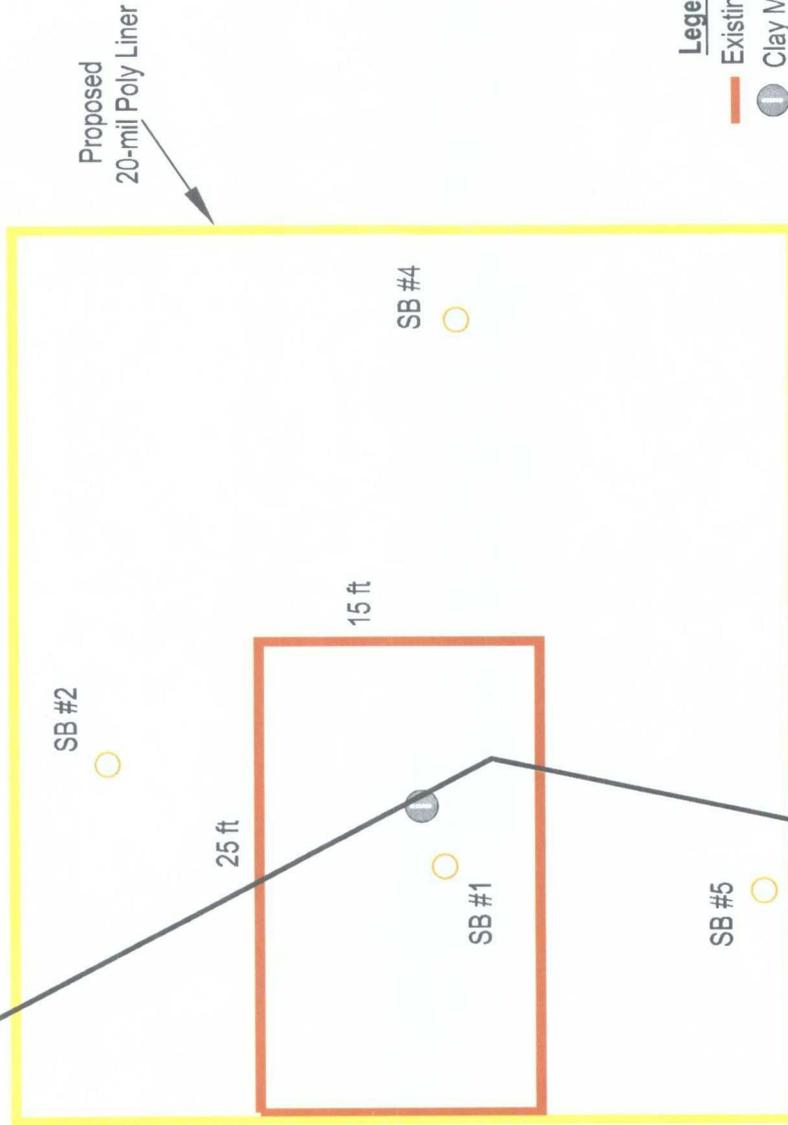
T20S R37E



Area Manager S. TISCHER	 <p>7-11 N. Carancahua Suite 1700 Corpus Christi, TX 78475 Tel: 361-883-1353 Fax: 361-883-7565 www.arcadis-us.com</p>	Project Number MT0000911.0001
Project Manager S. HALL		Drawing Date 9/16/09
Task Manager TSK/MGR	<p>RICE OPERATING COMPANY EUNICE MONUMENT EUMONT (EME) JCT. F-18</p> <p>CHLORIDE CONCENTRATIONS IN SOIL (milligrams per Kilogram)</p> <p>Eunice, Lea County, New Mexico</p>	Figure 2
Technical Review DPL		

EME Jct. F-18

T20S R37E



- Legend**
- Existing Clay Liner
 - Clay Marker
 - Soil Bores
 - Active ROC Line
 - Proposed Poly Liner

Project Number	MT000911.0001
Drawing Date	9/16/09
Figure	3

RICE OPERATING COMPANY
 EUNICE MONUMENT EUMONT (EME) JCT. F-18
 INFILTRATION BARRIER
 PROPOSED EXTENSION
 Eunice, Lea County, New Mexico



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 Corpus Christi, TX 78475
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Area Manager	S. TISCHER
Project Manager	S. HALL
Task Manager	TSKMGR
Technical Review	DPL

TABLE 1**Chloride Concentrations in Soil Boring Samples (milligrams per kilogram)****Field (F) and Laboratory (L) Analysis**

Sample Identification	Chloride Concentration
SB-1 15-17'	1,064 F
SB-1 20'	1,170 L
SB-1 20-22'	1,067 F
SB-1 22-25'	627 F
SB-1 25'	720 L
SB-2 0-5'	149 F
SB-2 5-10'	725 F
SB-2 10-15'	1,086 F
SB-2 15'	1,340 L
SB-2 15-20'	481 F
SB-2 20'	1,220 L
SB-2 20-25'	441 F
SB-3 0-5'	141 F
SB-3 5-10'	518 F
SB-3 10'	980 L
SB-3 10-15'	359 F
SB-3 15-20'	457 F
SB-3 20'	480 L
SB-3 20-25'	201 F
SB-4 0-5'	144 F
SB-4 5-10'	859 F
SB-4 10'	832 L
SB-4 10-15'	578 F
SB-4 15-20'	460 F
SB-4 20'	864 L
SB-4 20-25'	360 F
SB-5 0-5'	138 F
SB-5 5-10'	333 F
SB-5 10-15'	491 F
SB-5 15-20'	545 F
SB-5 20'	768 L
SB-5 20-25'	229 F



BORING LOG

BORING NO.

SB-1

1004 N. Big Spring St. Suite 300. Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER:	MT000911.0001.00001	DRILLING CO:	HARRISON-COOPER
CLIENT NAME:	RICE OPERATING COMPANY	DRILLING METHOD:	AIR ROTARY
PROJECT NAME:	INVESTIGATION AND CHARACTERIZATION PLAN	DRILLER:	KEN COOPER
SITE LOCATION:	EUNICE MONUMENT EUMONT (EME) JUNCTION F-18 LEA COUNTY, NEW MEXICO	LOGGER:	R. LANG
UNIQUE NUMBER:	31-014-00923	DATE BEGUN:	3/5/09
		DATE COMPLETED:	3/5/09
		FILE NAME	SB-1.DAT

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	CHLORIDES	LITHOLOGY	DESCRIPTION
0									BACKFILL No recovery, fill dirt.
-5									
-10									
-15		SS			2.0'	3.0	1.064		CALICHE 5YR 8/1 white, hard, indurated.
-20		SS			2.0'	1.3	Lab 1.170 1.067		SANDSTONE 10YR 8/3 very pale brown, medium to fine grained sand, subangular, moderately sorted, soft.
-25		Shovel			2.0'	0.8	Lab 720 627		Note: Becoming moist at -22.0'. In 20 minutes water level at -28.0'.
-30		Shovel							



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BORING LOG

BORING NO.

SB-2

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER:	MT000911.0001.00001	DRILLING CO:	HARRISON-COOPER
CLIENT NAME:	RICE OPERATING COMPANY	DRILLING METHOD:	AIR ROTARY
PROJECT NAME:	INVESTIGATION AND CHARACTERIZATION PLAN	DRILLER:	KEN COOPER
SITE LOCATION:	EUNICE MONUMENT EUMONT (EME) JUNCTION F-18 LEA COUNTY, NEW MEXICO	LOGGER:	R. LANG
UNIQUE NUMBER:	31-014-00924	DATE BEGUN:	3/5/09
		DATE COMPLETED:	3/5/09
		FILE NAME	SB-2.DAT

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVN READING	CHLORIDES	LITHOLOGY	DESCRIPTION
0									
	X	Shovel					149		SAND 10YR 8/3 very pale brown, medium to fine grained, subangular, moderately sorted, soft.
-5	X	Shovel					725		
-10	X	Shovel					1,086		SANDSTONE 10YR 8/3 very pale brown, Sand: medium to fine grained, subangular, moderately sorted, soft, caliche cement, soft, some nodular caliche.
-15						Lab 1,340			
-20	X	Shovel					481		
-25	X	Shovel					Lab 1,220		
							441		
									NOTE: Becoming moist at -25.0'



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BORING LOG

BORING NO.

SB-3

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Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER:	MT000911.0001.00001	DRILLING CO:	HARRISON-COOPER
CLIENT NAME:	RICE OPERATING COMPANY	DRILLING METHOD:	AIR ROTARY
PROJECT NAME:	INVESTIGATION AND CHARACTERIZATION PLAN	DRILLER:	KEN COOPER
SITE LOCATION:	EUNICE MONUMENT EUMONT (EME) JUNCTION F-18 LEA COUNTY, NEW MEXICO	LOGGER:	R. LANG
UNIQUE NUMBER:	31-014-00925	DATE BEGUN:	3/5/09
		DATE COMPLETED:	3/5/09
		FILE NAME	SB-3.DAT

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OMV READING	CHLORIDES	LITHOLOGY	DESCRIPTION
0									
	X	Shovel				141			SAND 10YR 8/3 very pale brown, medium to fine grained, subangular, moderately sorted, loose, dry.
-5	X	Shovel				518			SANDSTONE 10YR 8/3 very pale brown, medium to fine grained sand, subangular, moderately sorted, soft, weakly cemented with caliche cement, soft, caliche nodules.
-10	X	Shovel				Lab 980			
-15	X	Shovel				359			
-20	X	Shovel				457			
-25	X	Shovel				Lab 480			
						201			NOTE: Becoming moist at -25.0'.



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BORING LOG

BORING NO.

SB-4

1004 N. Big Spring St., Suite 300, Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER:	MT000911.0001.00001	DRILLING CO:	HARRISON-COOPER
CLIENT NAME:	RICE OPERATING COMPANY	DRILLING METHOD:	AIR ROTARY
PROJECT NAME:	INVESTIGATION AND CHARACTERIZATION PLAN	DRILLER:	KEN COOPER
SITE LOCATION:	EUNICE MONUMENT EUMONT (EME) JUNCTION F-18 LEA COUNTY, NEW MEXICO	LOGGER:	R. LANG
UNIQUE NUMBER:	31-014-00926	DATE BEGUN:	3/5/09
		DATE COMPLETED:	3/5/09
		FILE NAME	SB-4.DAT

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	CHLORIDES	LITHOLOGY	DESCRIPTION
0									
	X	Shovel				144			SAND 10YR 8/3 very pale brown, medium to fine grained, subangular, moderately sorted, loose, dry.
-5	X	Shovel				859			
-10	X	Shovel				Lab 832			
-15	X	Shovel				578			SANDSTONE/CALICHE 50% SAND: 10YR 8/3 very pale brown, medium to fine grained, subangular, moderately sorted, soft, caliche cement; 50% CALICHE: 5YR 8/1 white, hard, becoming moist at -20.0--25.0".
-20	X	Shovel				460			
	X	Shovel				Lab 864			
-25	X	Shovel				360			



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BORING LOG

BORING NO.

SB-5

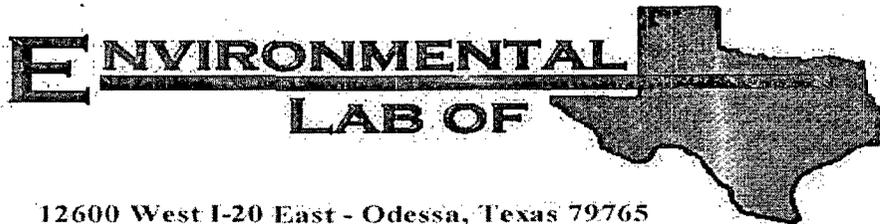
1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER:	MT000911.0001.00001	DRILLING CO:	HARRISON-COOPER
CLIENT NAME:	RICE OPERATING COMPANY	DRILLING METHOD:	AIR ROTARY
PROJECT NAME:	INVESTIGATION AND CHARACTERIZATION PLAN	DRILLER:	KEN COOPER
SITE LOCATION:	EUNICE MONUMENT EUMONT (EME) JUNCTION F-18 LEA COUNTY, NEW MEXICO	LOGGER:	R. LANG
UNIQUE NUMBER:	31-014-00927	DATE BEGUN:	3/5/09
		DATE COMPLETED:	3/5/09
		FILE NAME	SB-5.DAT

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	CHLORIDES	LITHOLOGY	DESCRIPTION
0									
	X	Shovel				138			SAND 10YR 8/3 very pale brown, medium grained, subangular, well sorted, loose, dry.
-5									
	X	Shovel				333			
-10									
	X	Shovel				491			SANDSTONE/CALICHE 50% SAND: 10YR 8/3 very pale brown, medium grained, subangular, well sorted, soft, caliche cement; 50% CALICHE: 5YR 8/1 white, hard, becoming moist at -20.0'--25.0'.
-15									
	X	Shovel				545			
-20									
	X	Shovel				Lab 768			
-25									
	X	Shovel				229			



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

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

25 x 15 x 12-ft-deep excavation

Project: Jct. F-18
Project Number: None Given
Location: EME

Lab Order Number: 4H24001

Report Date: 08/27/04

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

Project: Jct. F-18
Project Number: None Given
Project Manager: Roy Rascon

Fax: (505) 397-1471
Reported:
08/27/04 08:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
12' Bottom Composite	4H24001-01	Soil	08/20/04 09:00	08/24/04 08:00
Wall Composite	4H24001-02	Soil	08/20/04 09:00	08/24/04 08:00
Backfill Composite	4H24001-03	Soil	08/20/04 09:00	08/24/04 08:00

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

Project: Jct. F-18
Project Number: None Given
Project Manager: Roy Rascon

Fax: (505) 397-1471

Reported:
08/27/04 08:33

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
12' Bottom Composite (4H24001-01) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EH42405	08/24/04	08/25/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		96.2 %	70-130		"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>		72.6 %	70-130		"	"	"	"	
Wall Composite (4H24001-02) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EH42405	08/24/04	08/25/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		86.4 %	70-130		"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>		74.6 %	70-130		"	"	"	"	
Backfill Composite (4H24001-03) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EH42405	08/24/04	08/25/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		97.6 %	70-130		"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>		71.8 %	70-130		"	"	"	"	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

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

Project: Jct. F-18
Project Number: None Given
Project Manager: Roy Rascon

Fax: (505) 397-1471

Reported:
08/27/04 08:33

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
12' Bottom Composite (4H24001-01) Soil									
Chloride	1320	20.0	mg/kg Wet	2	EH42637	08/25/04	08/26/04	SW 846 9253	
% Solids	87.0		%	1	EH42506	08/24/04	08/24/04	% calculation	
Wall Composite (4H24001-02) Soil									
Chloride	266	20.0	mg/kg Wet	2	EH42637	08/25/04	08/26/04	SW 846 9253	
% Solids	95.0		%	1	EH42506	08/24/04	08/24/04	% calculation	
Backfill Composite (4H24001-03) Soil									
Chloride	308	20.0	mg/kg Wet	2	EH42637	08/25/04	08/26/04	SW 846 9253	
% Solids	95.0		%	1	EH42506	08/24/04	08/24/04	% calculation	

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

Project: Jct. F-18
Project Number: None Given
Project Manager: Roy Rascon

Fax: (505) 397-1471

Reported:
08/27/04 08:33

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
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Batch EH42405 - Solvent Extraction (GC)

Blank (EH42405-BLK1)

Prepared: 08/24/04 Analyzed: 08/25/04

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	49.8		mg/kg	50.0		99.6	70-130			
Surrogate: 1-Chlorooctadecane	42.5		"	50.0		85.0	70-130			

LCS (EH42405-BS1)

Prepared: 08/24/04 Analyzed: 08/25/04

Gasoline Range Organics C6-C12	476	10.0	mg/kg wet	500		95.2	75-125			
Diesel Range Organics >C12-C35	526	10.0	"	500		105	75-125			
Total Hydrocarbon C6-C35	1000	10.0	"	1000		100	75-125			
Surrogate: 1-Chlorooctane	52.5		mg/kg	50.0		105	70-130			
Surrogate: 1-Chlorooctadecane	40.9		"	50.0		81.8	70-130			

Calibration Check (EH42405-CCV1)

Prepared: 08/24/04 Analyzed: 08/25/04

Gasoline Range Organics C6-C12	457		mg/kg	500		91.4	80-120			
Diesel Range Organics >C12-C35	513		"	500		103	80-120			
Total Hydrocarbon C6-C35	970		"	1000		97.0	80-120			
Surrogate: 1-Chlorooctane	52.2		"	50.0		104	70-130			
Surrogate: 1-Chlorooctadecane	37.7		"	50.0		75.4	70-130			

Matrix Spike (EH42405-MS1)

Source: 4H24001-01

Prepared: 08/24/04 Analyzed: 08/25/04

Gasoline Range Organics C6-C12	638	10.0	mg/kg dry	575	ND	111	75-125			
Diesel Range Organics >C12-C35	635	10.0	"	575	ND	110	75-125			
Total Hydrocarbon C6-C35	1270	10.0	"	1150	ND	110	75-125			
Surrogate: 1-Chlorooctane	58.0		mg/kg	50.0		116	70-130			
Surrogate: 1-Chlorooctadecane	40.1		"	50.0		80.2	70-130			

Matrix Spike Dup (EH42405-MSD1)

Source: 4H24001-01

Prepared: 08/24/04 Analyzed: 08/25/04

Gasoline Range Organics C6-C12	635	10.0	mg/kg dry	575	ND	110	75-125	0.471	20	
Diesel Range Organics >C12-C35	642	10.0	"	575	ND	112	75-125	1.10	20	
Total Hydrocarbon C6-C35	1280	10.0	"	1150	ND	111	75-125	0.784	20	
Surrogate: 1-Chlorooctane	60.0		mg/kg	50.0		120	70-130			
Surrogate: 1-Chlorooctadecane	48.1		"	50.0		96.2	70-130			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

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

Project: Jct. F-18
Project Number: None Given
Project Manager: Roy Rascon

Fax: (505) 397-1471

Reported:
08/27/04 08:33

**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 EH42506 - General Preparation (Prep)										
Blank (EH42506-BLK1) Prepared & Analyzed: 08/24/04										
% Solids	100		%							
Duplicate (EH42506-DUP1) Source: 4H24001-01 Prepared & Analyzed: 08/24/04										
% Solids	87.0		%		87.0			0.00	20	
Batch EH42637 - Water Extraction										
Blank (EH42637-BLK1) Prepared: 08/25/04 Analyzed: 08/26/04										
Chloride	ND	20.0	mg/kg Wet							
Matrix Spike (EH42637-MS1) Source: 4H24001-01 Prepared: 08/25/04 Analyzed: 08/26/04										
Chloride	1790	20.0	mg/kg Wet	500	1320	94.0	80-120			
Matrix Spike Dup (EH42637-MSD1) Source: 4H24001-01 Prepared: 08/25/04 Analyzed: 08/26/04										
Chloride	1790	20.0	mg/kg Wet	500	1320	94.0	80-120	0.00	20	
Reference (EH42637-SRM1) Prepared: 08/25/04 Analyzed: 08/26/04										
Chloride	5000		mg/kg	5000		100	80-120			

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Notes and Definitions

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: 8-27-04

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.

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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: HACK CONDER
122 WEST TAYLOR
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 03/06/09
Reporting Date: 03/10/09
Project Number: NOT GIVEN
Project Name: EME JCT F-18
Project Location: NOT GIVEN

Analysis Date: 03/09/09
Sampling Date: 03/05/09
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: TR

LAB NO.	SAMPLE ID	Cl ⁻ (mg/kg)
H17030-1	SB #1 @ 20'	1,170
H17030-2	SB #1 @ 25'	720
H17030-3	SB #2 @ 15'	1,340
H17030-4	SB #2 @ 20'	1,220
H17030-5	SB #3 @ 10'	980
H17030-6	SB #3 @ 20'	480
H17030-7	SB #4 @ 10'	832
H17030-8	SB #4 @ 20'	864
H17030-9	SB #5 @ 20'	768
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		< 0.1

METHOD: Standard Methods 4500-Cl⁻B

Note: Analyses performed on 1:4 w:v aqueous extracts.

Chemist

Date

H17030 RICE

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