

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-Cl⁻B 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

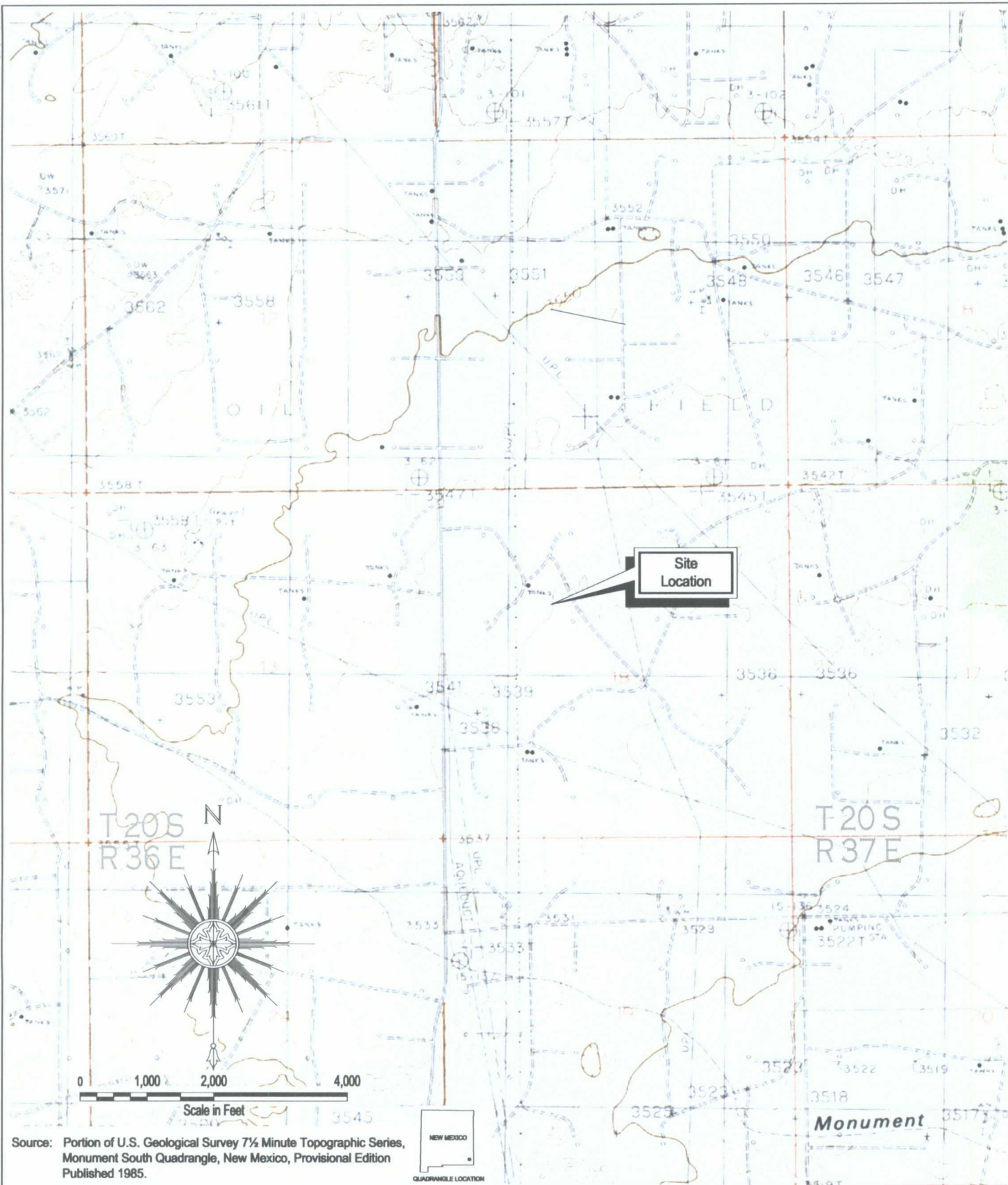
Ed Hansen
October 21, 2009

Sharon E. Hall

Sharon E. Hall
Associate Vice President

Copies:
Hack Conder- Rice Operating Company

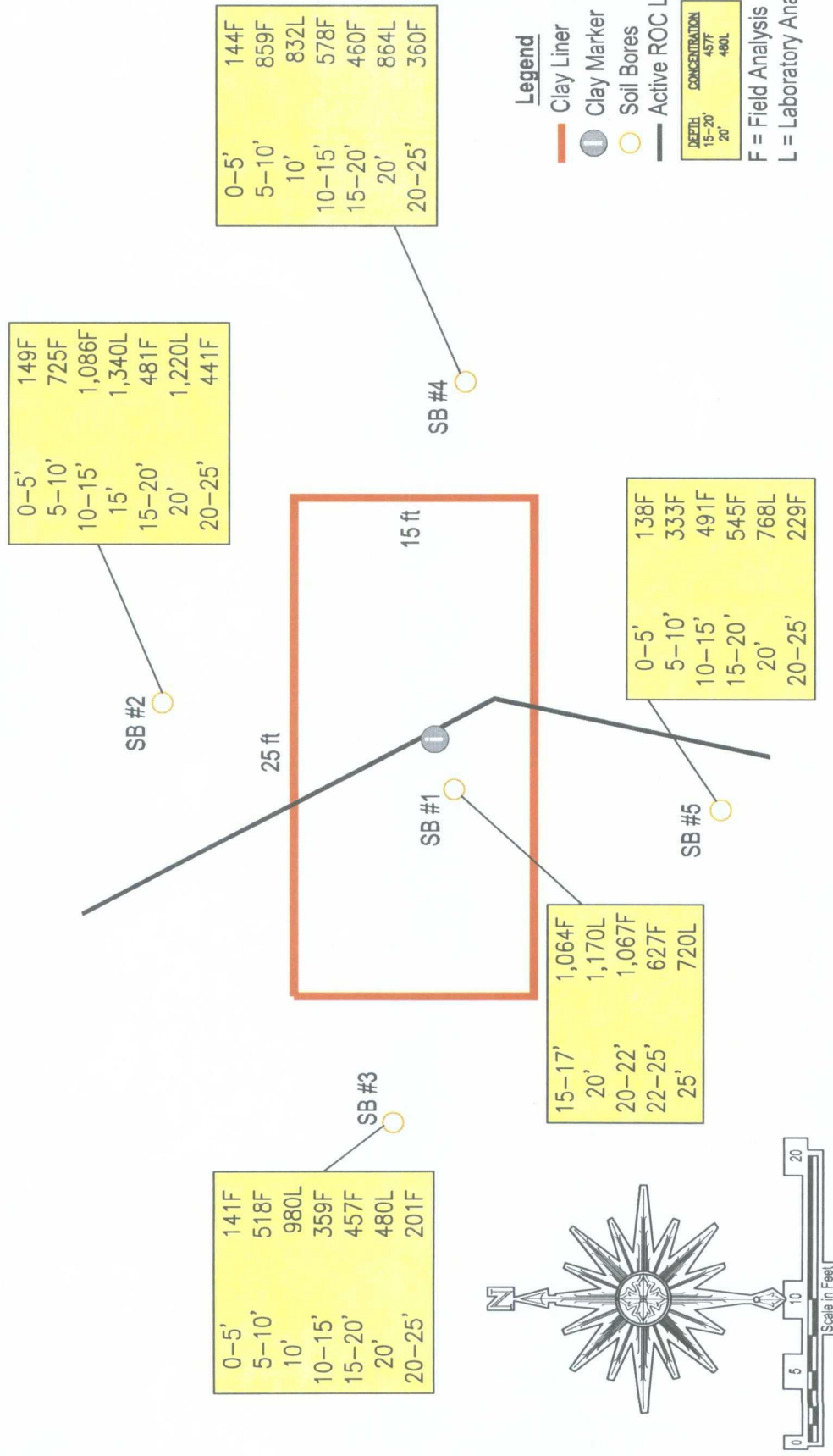
Attachments:
Figures 1-3
Table 1
Soil Boring Logs
Laboratory Report



<p>Area Manager A. Schmidt</p> <p>Project Manager S. Hall</p> <p>Task Manager R. Nanny</p> <p>Technical Review S. Tischer</p>	<p>ARCADIS</p> <p>1004 North Big Spring Street Suite 300 Midland, TX 79701-3383 Tel: 432-687-5400 Fax: 432-687-5401 www.arcadis-us.com</p>	<p>Rice Operating Company Eunice Monument Eumont (EME) SWD System – Jct. F-18</p> <p>Site Location Map</p> <p>Lea County, New Mexico</p>	<p>Project Number MT000911.0001</p> <p>Drawing Date 27 November 2006</p> <p>Figure 1</p>
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EME Jct. F-18

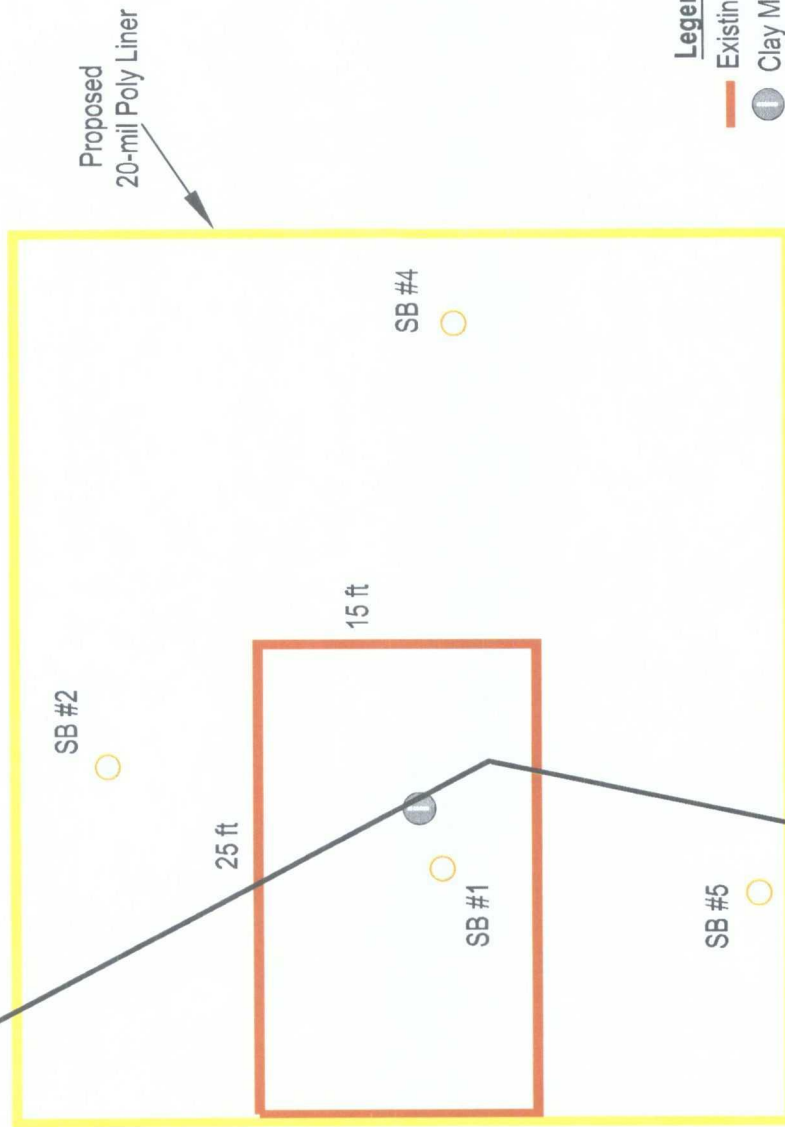
T20S R37E



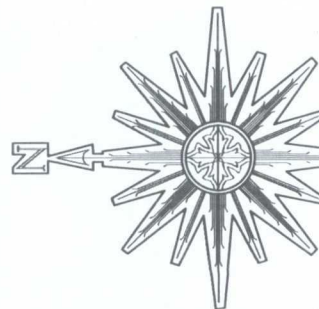
<div>Area Manager</div> <div>S. TISCHER</div> <div>Project Manager</div> <div>S. HALL</div> <div>Task Manager</div> <div>TSK/MGR</div> <div>Technical Review</div> <div>DPL</div>	<div> <div>ARCADIS</div> <div>711 N. Carancahua</div> <div>Suite 1700</div> <div>Corpus Christi, TX 78475</div> <div>Tel: 361-883-1353 Fax: 361-883-7565</div> <div>www.arcadis-us.com</div> </div>		
	<div> <div>RICE OPERATING COMPANY</div> <div>EUNICE MONUMENT EUMONT (EME) JCT. F-18</div> </div>		
	<div> <div>CHLORIDE CONCENTRATIONS IN SOIL</div> <div>(milligrams per Kilogram)</div> <div>Eunice, Lea County, New Mexico</div> </div>		
	<div>Project Number</div> <div>MT0000911.0001</div>	<div>Drawing Date</div> <div>9/16/09</div>	<div>Figure</div> <div>2</div>

EME Jct. F-18

T20S R37E



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



Area Manager S. TISCHER	 <p>711 N. Carancahua Suite 1700 Corpus Christi, TX 78475 Tel: 361-883-1353 Fax: 361-883-7565 www.arcadis-us.com</p>	RICE OPERATING COMPANY EUNICE MONUMENT EUMONT (EME) JCT. F-18 INFILTRATION BARRIER PROPOSED EXTENSION Eunice, Lea County, New Mexico		Project Number MT000911.0001
Project Manager S. HALL				Drawing Date 9/16/09
Task Manager TSK/MGR				Figure 3
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'	360F
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
 LOGGERS: R. LANG
 DATE BEGUN: 3/5/09 DATE COMPLETED: 3/5/09
 UNIQUE NUMBER: 31-014-00923 FILE NAME SB-1.DAT

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVN 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							

**ARCADIS**

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	LOGGER:	R. LANG
	LEA COUNTY, NEW MEXICO	DATE BEGUN:	3/5/09
		DATE COMPLETED:	3/5/09
UNIQUE NUMBER:	31-014-00924	FILE NAME	SB-2.DAT

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

CITY: MIDLAND, TX DIV/GROUP: ENV DB: H.CLARDY LD: PIC: PM: S.HALL TM: S.HALL

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BORING LOG

BORING NO.

SB-3

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

LOGGER: R. LANG

LEA COUNTY, NEW MEXICO

DATE BEGUN: 3/5/09 DATE COMPLETED: 3/5/09

UNIQUE NUMBER: 31-014-00925

FILE NAME SB-3.DAT

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

CITY: MIDLAND, TX DIV/GROUP: ENV DB: H.CLARDY LD: PIC: PM: S.HALL TM: S.HALL

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**ARCADIS**

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	LOGGER:	R. LANG
	LEA COUNTY, NEW MEXICO	DATE BEGUN:	3/5/09
		DATE COMPLETED:	3/5/09
UNIQUE NUMBER:	31-014-00926	FILE NAME	SB-4.DAT

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	CHLORIDES	LITHOLOGY	DESCRIPTION
0									
		Shovel					144		SAND 10YR 8/3 very pale brown, medium to fine grained, subangular, moderately sorted, loose, dry.
-5		Shovel					859		
-10		Shovel					Lab 832		
-15		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		Shovel					460		
							Lab 864		
-25		Shovel					360		



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

LOGGER: R. LANG

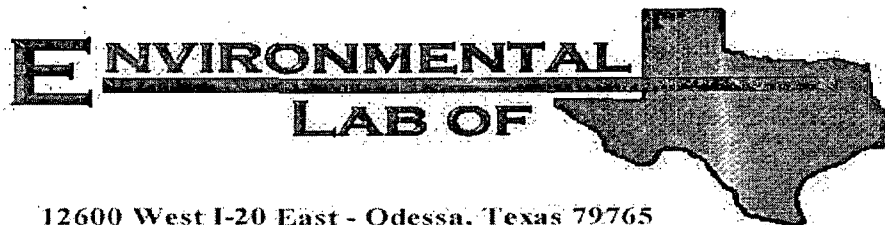
LEA COUNTY, NEW MEXICO

DATE BEGUN: 3/5/09 DATE COMPLETED: 3/5/09

UNIQUE NUMBER: 31-014-00927

FILE NAME SB-5.DAT

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	QVM READING	CHLORIDES	LITHOLOGY	DESCRIPTION
0									
		Shovel				138			SAND 10YR 8/3 very pale brown, medium grained, subangular, well sorted, loose, dry.
-5		Shovel				333			
-10		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		Shovel				545			
-20						Lab 768			
		Shovel				229			
-25									



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	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		96.2 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		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	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		86.4 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		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	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		97.6 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		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.

Page 2 of 6

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	

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.

Page 3 of 6

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

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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
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Batch EH42506 - General Preparation (Prep)

Blank (EH42506-BLK1)

Prepared & Analyzed: 08/24/04

% Solids	100	%
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Duplicate (EH42506-DUP1)

Source: 4H24001-01

Prepared & Analyzed: 08/24/04

% Solids	87.0	%	87.0	0.00	20
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Batch EH42637 - Water Extraction

Blank (EH42637-BLK1)

Prepared: 08/25/04 Analyzed: 08/26/04

Chloride	ND	20.0 mg/kg Wet
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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
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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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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

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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Environmental Lab of Texas

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CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

Project Name: Jct. F-18

Project #:

Project Loc: EME

PO #:

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: [Signature]

Fax No: (505) 397-1471

Sampler Signature:

[illegible]



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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