

1R - 427-338

REPORTS

DATE:

3-23-11

1R427-338

EME Jct. F-10

2010

RECEIVED

APR - 1 2011

Oil Conservation Division
1220 S. St. Francis Street
Santa Fe, NM 87501

CLOSURE

**RICE OPERATING COMPANY
JUNCTION BOX FINAL REPORT**

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET	
Eunice Monument Eumont (EME)	Jct. F-10	F	10	21S	36E	Lea		Eliminated

LAND TYPE: BLM _____ STATE _____ FEE LANDOWNER Millard Deck OTHER _____

Depth to Groundwater 200 feet NMOCD SITE ASSESSMENT RANKING SCORE: 20*

Date Started 10/15/2010 Date Completed 11/18/2010 OCD Witness no

Soil Excavated 400.0 cubic yards Excavation Length 30 Width 30 12 feet

Soil Disposed 286 cubic yards Offsite Facility Sundance Location Eunice, NM

FINAL ANALYTICAL RESULTS: Sample Date 10/26/2010, 11/18/2010 Sample Depth 12 ft, 15 ft, 35 ft

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

Sample Location	PID (field) ppm	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chloride mg/kg
4-WALL COMP.	57.3	N/A	N/A	N/A	N/A	<10.0	<10.0	160
BOTTOM COMP.	6.7	N/A	N/A	N/A	N/A	<10.0	<10.0	2120
BACKFILL	104	<0.050	0.07	<0.050	<0.150	<10.0	<10.0	432
SB # 1 @ 15ft	0.1	N/A	N/A	N/A	N/A	<10.0	<10.0	2280
SB # 1 @ 35ft	0	N/A	N/A	N/A	N/A	<10.0	<10.0	128

General Description of Remedial Action: This junction and line were eliminated

during the pipeline replacement/upgrade program. After the former junction box was removed, an investigation was conducted using a backhoe to collect soil samples at regular intervals creating a 30X30X12-ft. deep excavation. Chloride field test performed on each sample yielded chloride concentrations that did not relent with depth. Organic vapors were measured using a PID, which yielded some elevated concentrations. 286 yards of excavated soil was hauled to a NMOCD approved facility. The remaining excavated soil was blended on site and representative samples were collected from the blended backfill, the bottom of the excavation, and excavation walls. The representative samples were sent to a commercial laboratory for analysis of chloride, TPH, and BTEX.

The excavation was backfilled with the blended backfill to 5 ft. below ground surface (BGS).

At 5-4 ft., a 1-ft. thick clay barrier was installed with compaction test performed on 11/08/2010. The remaining excavation was backfilled using the blended backfill to 2 ft. BGS and the remaining excavation was backfilled with clean imported soil to ground surface and contoured to the surrounding area. On 11/11/2010, the site was seeded with a blend of native vegetation and is expected to return to a productive capacity at a normal rate. An identification plate was placed on the surface of the former junction box site to mark the presence of clay below. To further investigate the depth of chloride presence, a soil bore was initiated on 11/18/2010 at 15 ft. east of the former junction box. The boring was advanced to a depth of 35 ft. BGS with soil samples collected every 5 ft. between 15-35 ft. Chloride field test performed on each sample yielded chloride concentrations that did relent with depth. Organic vapors were measured using a PID, which yielded low concentrations. The 20 ft. and 35 ft. sample were sent to a commercial laboratory for analysis of chloride and TPH. The entire bore was plugged with bentonite to ground surface.

* Housing and windmill 700 ft. north west

CHLORIDE FIELD TESTS

LOCATION	DEPTH	mg/kg
4-Wall Comp.	n/a	2580
Bottom Comp.	12'	2352
Backfill	n/a	1584
SB at 15' east of the junction box (source)	15'	1889
	20'	950
	25'	273
	30'	178
	35'	181

enclosures: photos, soil bore log, lab results, PID (field) screening, compaction results, hydraulic conductivity, proctor, cross-section, chloride curve

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

SITE SUPERVISOR Dak Harris SIGNATURE Dak Harris COMPANY RICE OPERATING COMPANY

REPORT
ASSEMBLED BY Larry Bruce Baker Jr. INITIAL LBB

PROJECT LEADER Larry Bruce Baker Jr. SIGNATURE Larry Bruce Baker Jr. DATE 3-23-11

EME Jct F-10

Unit F, Section 10, T21S, R36E



Site prior to delineation

10/15/2010



Final Excavation

10/26/2010



Backfilling excavation above clay liner

11/8/2010



Seeding site

11/11/2010



Installing Soil Bore

11/18/2010



Plugging the soil bore with bentonite

11/18/2010

Logger:	Tony Grieco			
Driller:	Harrison & Cooper, Inc.			
Drilling Method:	Air rotary		Project Name:	Well ID:
Start Date:	11/18/2010		EME jct. F-10	SB-1
End Date:	11/18/2010		Project Consultant: None	
Comments: Located 15 ft east of the former junction box site.		Location: UL/F sec. 10 T21S R36E		
DRAFTED BY: L. Weinheimer TD = 35 ft GW = 200 ft		Lat: 32°29'44.515"N County: LEA Long: 103°15'25.958"W State: NM		

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Red/tan unconsolidated very fine sand/silt. Scattered large caliche pieces. Dry.		
15 ft	1889	Cl- 2280	0.1			
		GRO <10				
		DRO <10		Tan unconsolidated very fine sand/silt. Scattered large to medium consolidated pieces. Dry.		
20 ft	950		0.1			
25 ft	273		0			
30 ft	178		0			
35 ft	181	Cl- 128	0			
		GRO <10				
		DRO <10				

COPY



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

Analytical Results For:

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

Received: 11/19/2010
Reported: 11/29/2010
Project Name: EME F-10
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/18/2010
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SB #1 15' (H021354-01)

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2280	16.0	11/22/2010	ND	432	108	400	0.00	
TPH 8015M			mg/kg		Analyzed By: AB				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2010	ND	204	102	200	15.6	
DRO >C10-C28	<10.0	10.0	11/25/2010	ND	201	100	200	8.12	
Surrogate: 1-Chlorooctane	89.0 %	70-130							
Surrogate: 1-Chlorooctadecane	89.9 %	70-130							

Sample ID: SB #1 35' (H021354-02)

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	11/22/2010	ND	432	108	400	0.00	
TPH 8015M			mg/kg		Analyzed By: AB				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2010	ND	204	102	200	15.6	
DRO >C10-C28	<10.0	10.0	11/25/2010	ND	201	100	200	8.12	
Surrogate: 1-Chlorooctane	94.7 %	70-130							
Surrogate: 1-Chlorooctadecane	94.5 %	70-130							

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

Company Name: RIC		BILL TO		ANALYSIS REQUEST														
Project Manager: Heide Carder		P.O. #:																
Address: 122 W. Taylor		Company:																
City: Abilene		Attn:																
Phone #: 575 323 9174		State: TX																
Fax #: 575 323 9171		Address:																
Project #: ELME F-10		City:																
Project Name: ELME F-10		State: TX																
Project Location:		Phone #:																
Sampler Name: TRACY S. BULLOCK		Fax #:																
FOR LAB USE ONLY																		
Lab I.D.	Sample I.D.	MATRIX	PRESERV	SAMPLING	DATE	TIME												
1. H213541	SR #1 157	GROUNDWATER	✓	✓	11/14/10	8:30												
2. JR #1 351		SLUDGE	✓	✓	11/14/10	8:35												
				COPY														

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Relinquished By: [Signature]	Date: 11/14/10	Received By: [Signature]	Date: 11/14/10
Relinquished By: [Signature]	Date: 11/14/10	Received By: [Signature]	Date: 11/14/10
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	Checked By: [Signature]	Initials: [Signature]
Remarks: bcsample@rics.utd.edu jwealf@rics.utd.edu jwealf@rics.utd.edu Kjones@rics.utd.edu			

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

RICE OPERATING COMPANY

122 West Taylor ~ Hobbs, NM 88240

PHONE: (575) 393-9174 FAX: (575) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

CK
MODEL
NO.

✓

MODEL: PGM 7300 SERIAL NO: 590-000183
MODEL: PGM 7300 SERIAL NO: 590-000504
MODEL: PGM 7600 SERIAL NO: 110-12383
MODEL: PGM 7600 SERIAL NO: 110-02920

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: 930132	EXPIRATION DATE: 4/29/13
FILL DATE:	METER READING ACCURACY: 97.1

ACCURACY: +/- 2%

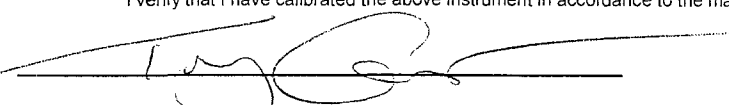
SYSTEM	SITE	UNIT	SECTION	TOWNSHIP	RANGE
EMI	JCT F-10	F	10	21S	36E

SAMPLE ID: SB 1

DEPTH	PID	DEPTH	PID	DEPTH	PID	DEPTH	PID
15	0.1						
20	0.1						
25	0.0						
30	0.0						
35	0.0						

I verify that I have calibrated the above instrument in accordance to the manufacture's operation manual.

Signature



Date

11/18/10

SITE MAP





CARDINAL Laboratories

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

Analytical Results For:

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

Received: 10/26/2010
Reported: 11/01/2010
Project Name: EMEJCT-F-10 (21/36)
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/26/2010
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: 5 PT. BOTTOM COMP @ 12' (H021148-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2120	16.0	10/27/2010	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/27/2010	ND	168	84.1	200	2.09		
DRO >C10-C28	<10.0	10.0	10/27/2010	ND	221	111	200	0.403		
Surrogate: 1-Chlorooctane	87.8%	70-130								
Surrogate: 1-Chlorooctadecane	83.3%	70-130								

Sample ID: 4-WALL COMP 30' X 30' (H021148-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	10/27/2010	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/27/2010	ND	168	84.1	200	2.09		
DRO >C10-C28	<10.0	10.0	10/27/2010	ND	221	111	200	0.403		
Surrogate: 1-Chlorooctane	103%	70-130								
Surrogate: 1-Chlorooctadecane	101%	70-130								

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Celestine D. Keene

Celestine D. Keene, Lab. Director/Quality Manager

Page 2 of 5

Analytical Results For:

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

Received: 10/26/2010
Reported: 11/01/2010
Project Name: EME JCT F-10 (21/36)
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/26/2010
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: BLENDED BACKFILL (H021148-03)

BTEX 8021B		mg/kg		Analyzed By: cms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2010	ND	2.05	102	2.00		
Toluene*	0.070	0.050	10/29/2010	ND	1.85	92.4	2.00		
Ethylbenzene*	<0.050	0.050	10/29/2010	ND	1.75	87.3	2.00		
Total Xylenes*	<0.150	0.150	10/29/2010	ND	5.25	87.4	6.00		

Surrogate: 4-Bromofluorobenzene (PIL) 87.3 % 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	10/27/2010	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/27/2010	ND	168	84.1	200	2.09	
DRO >C10-C28	<10.0	10.0	10/27/2010	ND	221	111	200	0.403	

Surrogate: 1-Chlorooctane 104 % 70-130

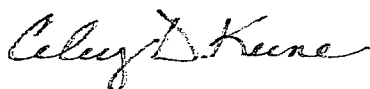
Surrogate: 1-Chlorooctadecane 99.5 % 70-130

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Celey D. Keene, Lab Director/Quality Manager

RICE OPERATING COMPANY

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

CK.	<input checked="" type="checkbox"/>
MODEL	
NO.	

MODEL: PGM 7300	SERIAL NO: 590-000508
MODEL: PGM 7300	SERIAL NO: 590-000504
MODEL: PGM 7320	SERIAL NO: 592-903318
MODEL: PGM 7300	SERIAL NO: 590-000183

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR BALANCE

LOT NO: 925621	EXPIRATION DATE: 9/27/12
METER READING ACCURACY: 100	

ACCURACY: +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
EME	F-10	F	10	21	36

SAMPLE ID	PID	SAMPLE ID	PID
5-PT BOTTOM COMPOSITE	6.7		
4 WALL Composite	57.3		
Blended Backfill	103.6		

COPY

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE:

Dan Harris

DATE:

10-26-10



LABORATORY TEST REPORT
PETTIGREW & ASSOCIATES, P.A.

1110 N. GRIMES
HOBBS, NM 88240
(575) 393-9827



DEBRA P. HICKS, P.E./L.S.I.
WILLIAM M. HICKS, III, P.E./P.S.

To: Rice Operating Company
122 W. Taylor
Hobbs, NM 88240

Material: Wallach Red Clay

Test Method: ASTM: D 2922

Project: EME Junction F-10
Project No. 2010.1333

Date of Test: November 8, 2010

Depth: See Below

Depth of Probe: 12"

Test No.	Location	Dry Density % Max	% Moisture	Depth
SG 1	EME Junction F-10; 10' N. & 15' W. of SE Corner	94.2	18.0	FG

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DEC 15 2010

RICE OPERATING
HOBBS, NM

Control Density: 101.1
ASTM: D 698

Optimum Moisture: 19.0%

Required Compaction: 90-95%

Densometer ID: 5071

Lab No.: 10 11054-11055

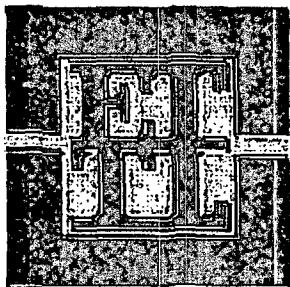
PETTIGREW & ASSOCIATES

Copies To: Rice Operating

BY:

BY:

P.E.



Home Office - 1717 East Erwin Street

Tyler, Texas 75702-6398

Office: (903) 595-4421 Lab: (903) 595-6402 Fax: (903) 595-8113

Area Offices

210 Beech Street

Texarkana, AR 71854

(870) 772-0013

707 West Cotton St.

Longview, TX 75804

(903) 758-0402

Acct ID: PETTIGREW

File ID: C4535-101

Date Sampled: 08/19/2010

Report Date: 08/27/2010

Sampled By: Client

Project: Pettigrew Associates - Project #2010.1026, Hobbs, NM

By Order Of: Erica Hart

Location: Material Origin: Wallach Pit, Sample Location: N/G

Order Number:

Client: Pettigrew & Associates, Hobbs, NM

Contractor: Not Given

REPORT: FLEXIBLE WALL PERMEAMETER

LAB NO: 9881

Test Method: See Below

TEST RESULTS

Report No: 1-1201-000005

Page 2 of 2

TEST READINGS

Z1(Mercury Height Difference @ 11): 5.1 cm Hydraulic Gradient = 9.20

Date	elapsed t (seconds)	Z (pipet @ t)	□□□ (cm)	temp (deg C)	□ (temp corr)	k (cm/sec)	k (ft./day)	Reset = *
8/23/2010	960	6.1	0.5571305	25	0.889	5.01E-08	1.42E-04	
8/23/2010	1200	6	0.6571305	25	0.889	4.78E-08	1.35E-04	
8/23/2010	1500	5.9	0.7571305	25	0.889	4.46E-08	1.26E-04	
8/23/2010	1800	5.8	0.8571305	25	0.889	4.25E-08	1.21E-04	

SUMMARY

ka =	4.62E-08 cm/sec	Acceptance criteria =	25 %
ki		Vm	
k1 =	5.01E-08 cm/sec	8.3 %	Vm = $\frac{ ka-ki }{ka} \times 100$
k2 =	4.78E-08 cm/sec	3.3 %	
k3 =	4.46E-08 cm/sec	3.6 %	
k4 =	4.25E-08 cm/sec	8.0 %	

Hydraulic conductivity	k =	4.62E-08 cm/sec	1.31E-04 ft/day
Void Ratio	e =	0.73	
Porosity	n =	0.42	
Bulk Density	□□□	1.84 g/cm3	121.2 pcf
Water Content	W =	0.42 cm3/cm3	(at 20 deg C)
Intrinsic Permeability	kint =	4.74E-13 cm2	(at 20 deg C)

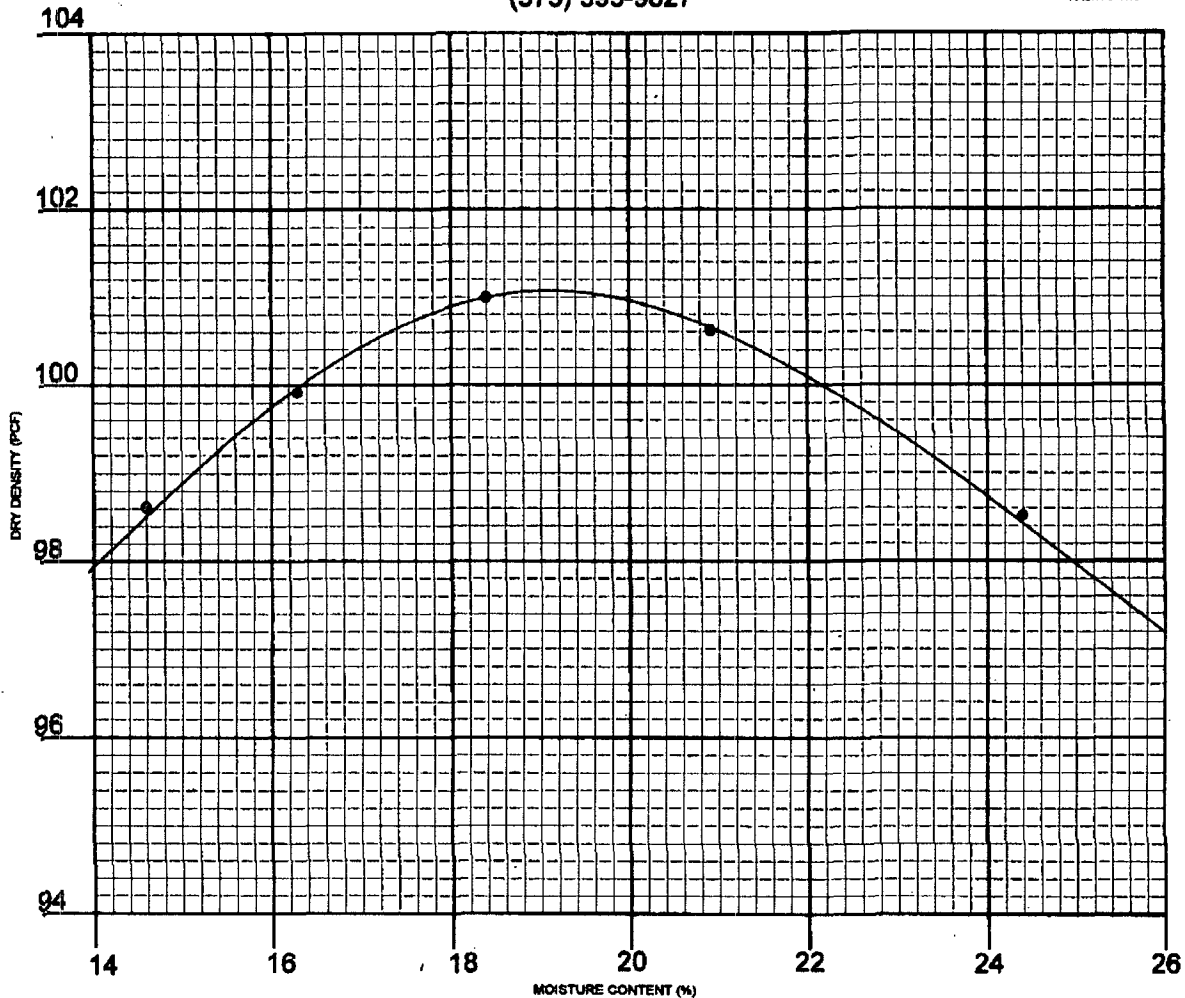
Remarks: These tests were performed solely at the request of the Client for his own use. No warranties are expressed or implied regarding the suitability of the site for construction or whether or not the reported data represents all conditions of the site.

COPY

Charge: Pettigrew & Associates Attn: Erica Hart
Orig: Pettigrew & Associates, Hobbs, NM Attn: Erica Hart
1-ec Pettigrew & Associates, Hobbs, NM Attn: Erica Hart
E-Mail: ehart@pettigrew.us



PETTIGREW & ASSOCIATES, P.A.
1110 N. GRIMES ST.
HOBBS, NM 88240
(575) 393-9827



General Information
CLIENT: Rice Operating PROJECT: Project No. 2010.1026
SAMPLE LOCATION: Wallach Pit
SOIL DESCRIPTION: Wallach Red Clay
SOIL CLASSIFICATION: _____ TEST METHOD: ASTM: D 698
ATTERBERG: LL _____ PI _____ Sampled & Delivered 8/13/10
DATE: 8/13/10 LAB NO. 10 5904-5906

DRY WEIGHT LB/CU. FT. 101.1 MOISTURE CONTENT % 19.0

SIEVE ANALYSIS - % PASSING									

PETTIGREW & ASSOCIATES

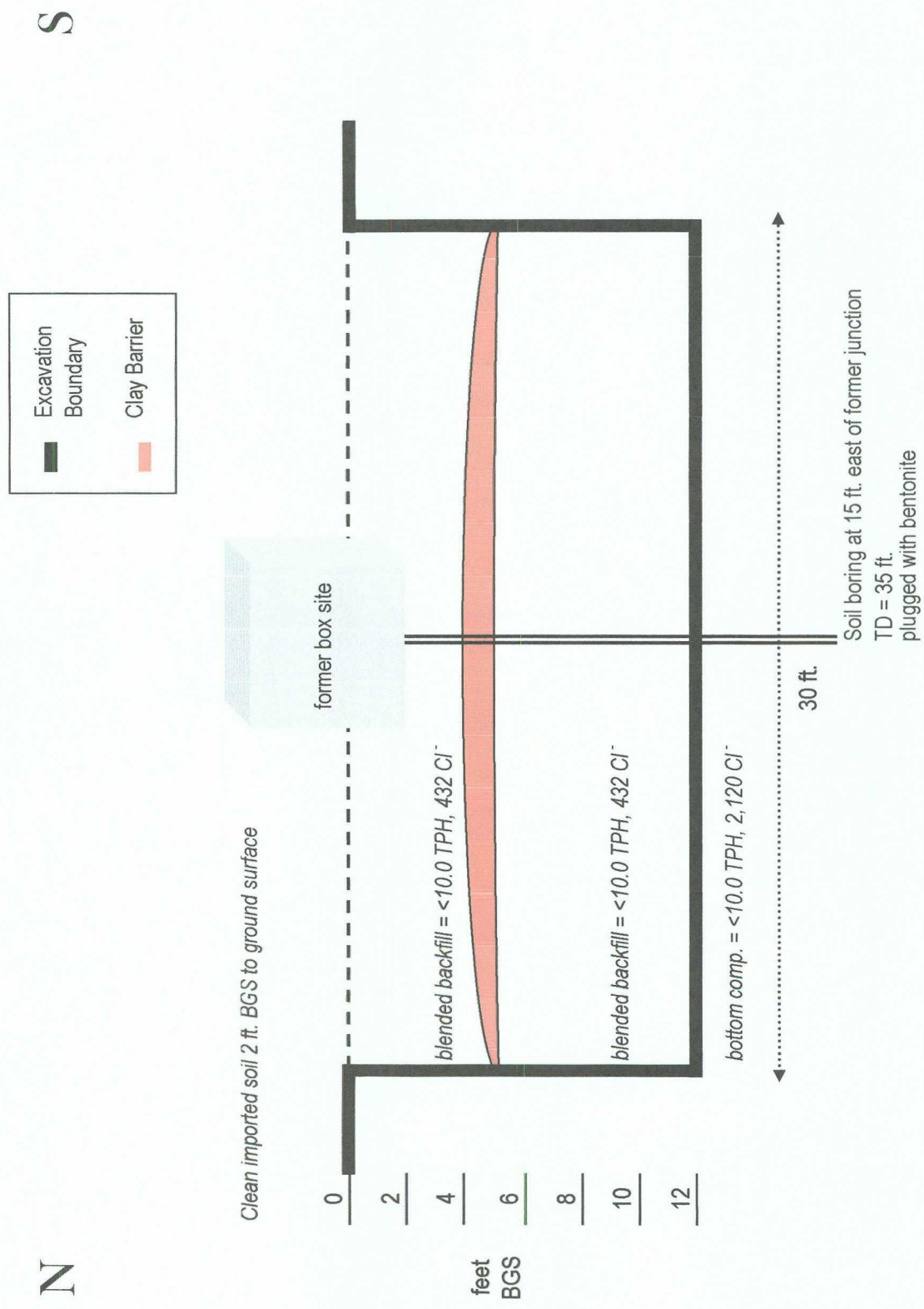
COPY

COPIES: Rice Operating

BY: *Erica M. Hart*
BY: *Jeffrey A. Roberts* P.E.

EME Jct. F-10
Unit 'F', Sec. 10, T21S, R36E

Excavation Cross-Section

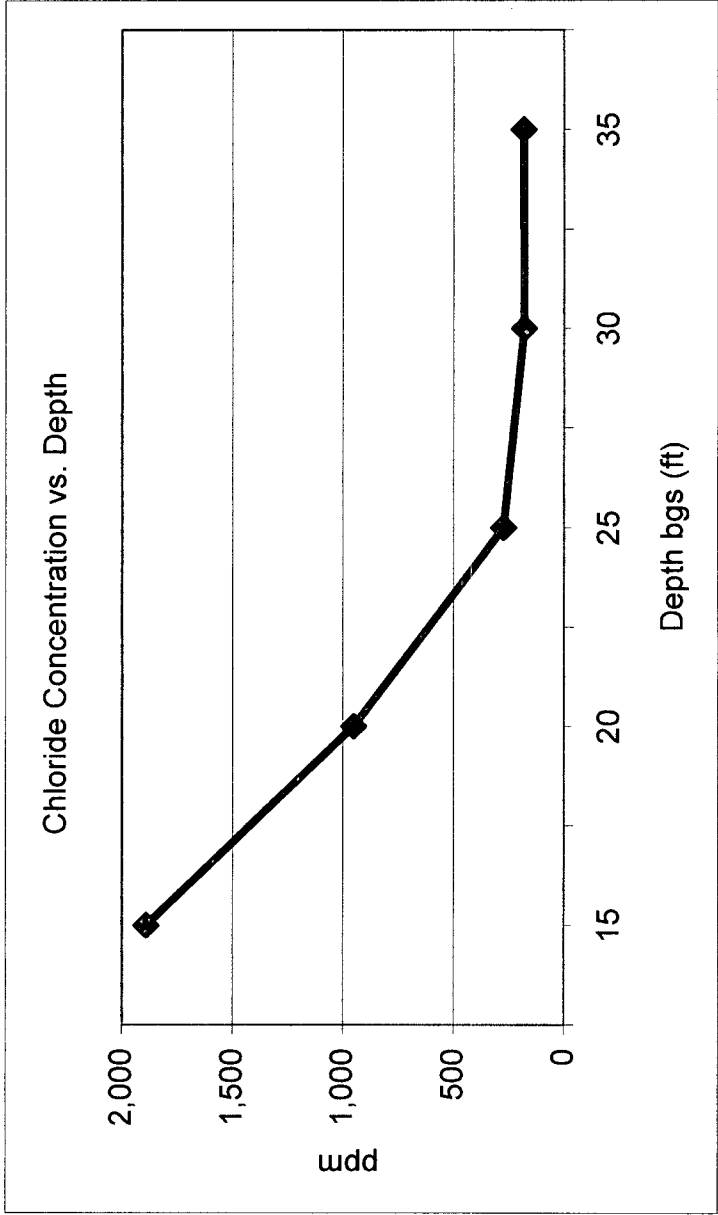


EME Jct. F-10

Unit 'F', Sec. 10, T21S, R36E

Soil bore at 15 ft. east of the junction (source)

Depth bgs (ft)	[Cl ⁻] ppm
15	1,889
20	950
25	273
30	178
35	181



Groundwater = 200 ft