1R - 426-278

REPORTS

DATE:

3-28-11

IR426-278

BD L-36 EOL

2010

DISCLOSURE

RICE OPERATING COMPANY
JUNCTION BOX DISCLOSURE REPORT

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length 12 ft.	Width 6 ft.	Depth 4 ft.
Blinebry-Drinkard (BD)	L-36 EOL	L	36	21S	37E	Lea	Moved 149' West		

LAND TYPE: BLM ___ STATE X FEE LANDOWNER _____ OTHER _____

Depth to Groundwater 48 feet NMOCD SITE ASSESSMENT RANKING SCORE: 20

Date Started 4/22/2010 Date Completed 6/11/2010 OCD Witness no

Soil Excavated 88.9 cubic yards Excavation Length 20 Width 10 Depth 12 feet

Soil Disposed 13 cubic yards Offsite Facility Sundance Services Location Eunice, NM

FINAL ANALYTICAL RESULTS: **Sample Date** 4/26/2010, 6/11/2010 **Sample Depth** 12 ft., 36 ft., 39 ft.

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

Sample Location	PID (field) ppm	GRO mg/kg	DRO mg/kg	Chlorides mg/kg
4-WALL COMP.	2.0	<10.0	330	896
BOTTOM COMP.	4.3	<10.0	242	3,280
BACKFILL COMP.	8.1	<10.0	69.5	560
SB # 1 @ 36 ft.	0.4	<10.0	<10.0	3,680
SB # 1 @ 39 ft.	0.5	<10.0	<10.0	3,360

CHLORIDE FIELD TESTS

LOCATION	DEPTH	mg/kg
4-wall comp.	n/a	536
bottom comp.	12'	1612
backfill comp.	n/a	659
SB # 1 at 10 ft. north of junction (source)	15'	1,114
	18'	853
	21'	811
	24'	662
	27'	1,841
	30'	2,147
	33'	2,699
	36'	2,970
	39'	3,009

General Description of Remedial Action: This junction box was addressed during the pipeline replacement/upgrade program. A new, water tight junction box was built 149 ft. west of the former junction box. After the junction box was removed, an investigation was conducted using a backhoe to collect soil samples at regular intervals creating a 20X10X12-ft. deep excavation. Chloride field tests performed on each sample yielded elevated chloride concentrations. Organic vapors were measured using a PID, which yielded low concentrations. The excavated soil was blended on site and representative samples were collected from the blended backfill, the bottom of the excavation, and the excavation walls. The representative samples were sent to a commercial laboratory for analysis of chloride and TPH. The blended backfill was returned to the excavation to 5 ft. below ground surface (BGS). At 5-4 ft. BGS, a 1-ft. thick clay barrier was installed with compaction test performed on 4/29/2010. The remaining excavation was backfilled with the blended backfill to 1 ft. BGS and clean imported soil was used to backfill to ground surface and contoured to the surrounding area. On 4/29/2010, 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 at 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 6/11/2010. The boring was advanced to a depth of 39 ft. BGS with soil samples collected every 3 ft. between 15-39-ft. Chloride field test were performed on each sample and organic vapors were measured using a PID. The 36 ft. and 39 ft. samples were taken to a commercial laboratory for analysis of chloride and TPH. The entire bore hole was plugged with bentonite to ground surface. NMOCD was notified of potential groundwater impact on 10/05/2010.

ADDITIONAL EVALUATION IS HIGH PRIORITY

enclosures: photos, boring log, lab results, PID (field) screenings, cross-section, hydraulic conductivity, proctor, compaction test, chloride curve

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

SITE SUPERVISOR Robert Egans SIGNATURE Robert Egans 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 3-28-11

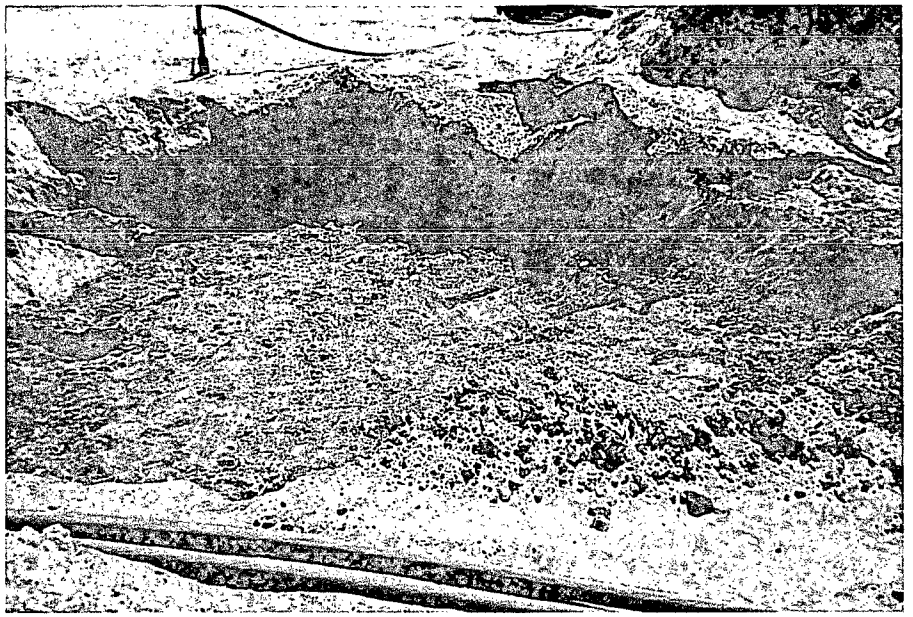
*This site is a "DISCLOSURE." It will be placed on a prioritized list of similar sites for further consideration.

BD L-36 EOL

Unit L, Section 36, T21S, R37E

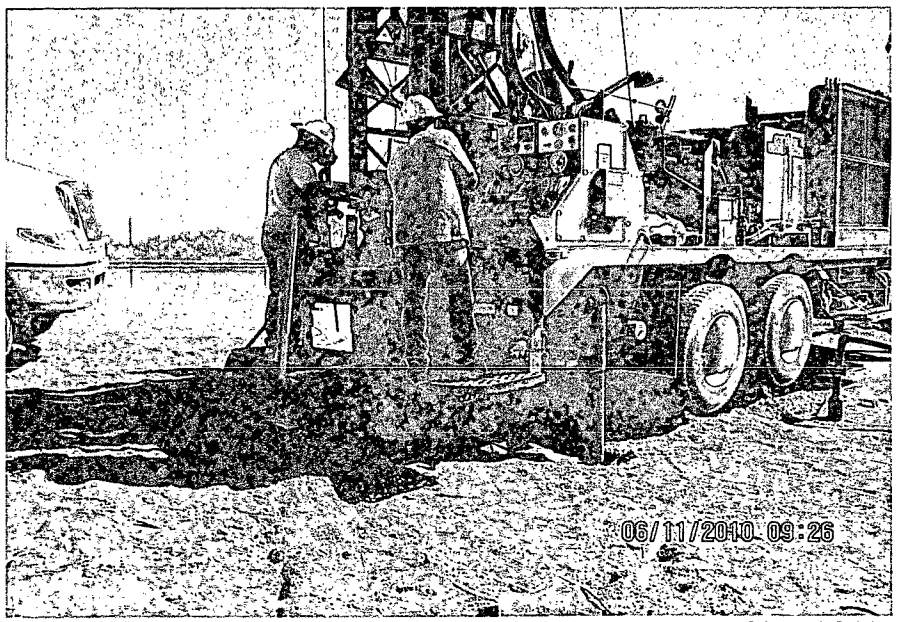
Site prior to Delineation 4/22/2010

Sample being collected 4/22/2010

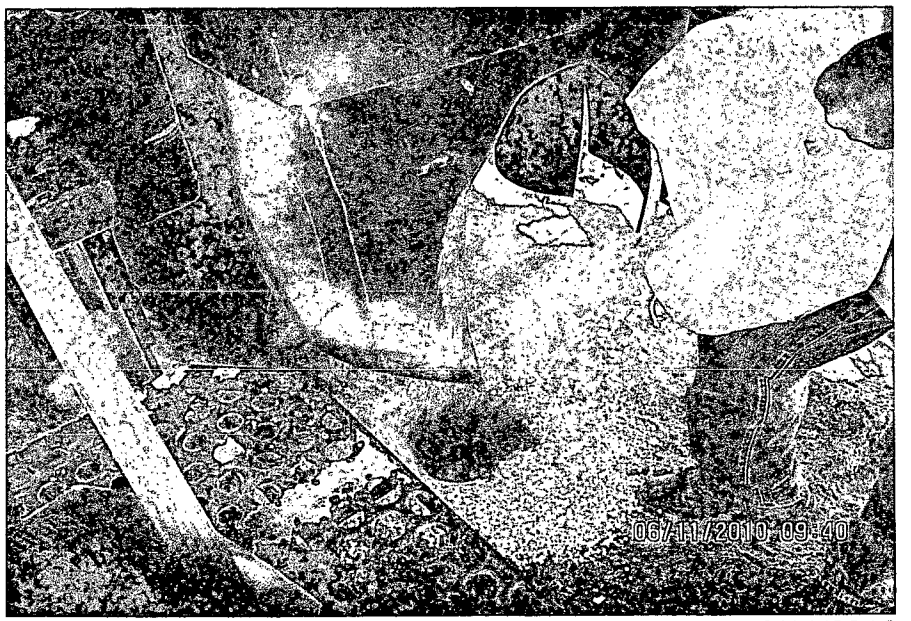


Clay liner installed 4/29/2010

Seeding site 5/12/2010

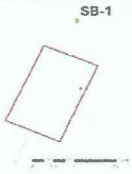


Drilling soil bore # 1 6/11/2010



Soil bore # 1 plugged with bentonite 6/11/2010

Logger:	Jordan Woodfin
Driller:	Harrison & Cooper Drilling, Inc.
Consultant:	N/A
Drilling Method	Air Rotary
Start Date:	6/11/2010
End Date:	6/11/2010



RICE OPERATING COMPANY ROC SINCE 1955

Project Name: BD L-36 EOL **Well ID:** SB-1

Location: UL/L sec. 36 T21S R37E
Lat: 32°25'54.966"N **County:** Lea
Long: 103°7'19.345"W **State:** NM

Comments: All samples from cuttings. Located 10' north of the former junction box site.

Drafted by: Lara Weinheimer

TD = 39 ft DGW = 48 ft

Depth (feet)	chloride field tests	LAB	PID	Description
				10 - 15 ft
				SAND
15 ft	1114		0.4	tan
				15 - 18 ft
				SAND AND CALICHE
18 ft	853		0.4	tan to brown
				18 - 24 ft
				SAND
21 ft	811		0.2	tan
24 ft	662		0.2	
				24 - 30 ft
				SAND AND CALICHE
27 ft	1841		0.2	tan
30 ft	2147		0.1	
				30 - 33 ft
				CALICHE
33 ft	2699		0.2	white
36 ft	2970	Cl- 3680	0.4	33 - 39 ft
		GRO <10		SAND
		DRO <10		white
39 ft	3009	Cl- 3360	0.5	
		GRO <10		
		DRO <10		

Lithology

Well Construction

bentonite seal

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: HACK CONDER
112 W. TAYLOR
HOBBS, NM 88240

Receiving Date: 06/11/10
Reporting Date: 06/14/10
Project Number: NOT GIVEN
Project Name: EME L-36 EOL
Project Location: EME L-36 EOL

Sampling Date: 06/11/10
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JH
Analyzed By: AB

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE		06/12/10	06/12/10	06/11/10
H20101-1	SB #1 @ 36'	<10.0	<10.0	3,680
H20101-2	SB #1 @ 39'	<10.0	<10.0	3,360
Quality Control		461	423	500
True Value QC		500	500	500
% Recovery		92.2	84.6	100
Relative Percent Difference		1.7	0.4	3.9

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl⁻: Std. Methods 4500-Cl⁻B
*Analyses performed on 1:4 w:v aqueous extracts.
Reported on wet weight.

Chemist

06/15/10
Date

H20101 TCL RICE

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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:	Rice Operating Company	**BILL TO**	
Project Manager:	Hack Conder	P.O. #:	
Address:	122 West Taylor	Company:	
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	393-9174 Fax #: 397-1471	Address:	
Project #:	Project Owner:	City:	
Project Name:	BD L-36 EOL	State: Zip:	
Project Location:	BD L-36 EOL	Phone #:	
Sampler Name:	Jordan Woodfin	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions
H20101-1	SB # 1 @ 36'	G	1			✓					✓		6/11/10	9:25	✓	✓			
2	SB # 1 @ 39'	G	1			✓					✓		6/11/10	9:30	✓	✓			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Jordan Woodfin	Date: 6-11-10 Time: 2:30	Received By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: 6-11-10 Time: 3:23	Received By: Jodi Henson	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool: ☑ Yes ☐ No Intact: ☐ Yes ☐ No	CHECKED BY: (Initials)

REMARKS:

email results

Hconder@riceswd.com; jwoodfin@riceswd.com; Lweinheimer@riceswd.com

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

#26

NEED SAMPLES BACK, PLEASE

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: BRUCE BAKER
112 W. TAYLOR
HOBBS, NM 88240

Receiving Date: 04/26/10
Reporting Date: 04/28/10
Project Number: NOT GIVEN
Project Name: BD L-36-EOL
Project Location: BD L-36-EOL

Sampling Date: 04/26/10
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JH
Analyzed By: AB/HM

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE		04/28/10	04/28/10	04/28/10
H19756-1	5PT BOTTOM COMP @ 12'	<10.0	242	3,280
H19756-2	4-WALL COMP	<10.0	330	896
H19756-3	BLENDED BACKFILL	<10.0	69.5	560
Quality Control		596	569	490
True Value QC		500	500	500
% Recovery		119	114	98.0
Relative Percent Difference		0.6	1.1	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB
*Analyses performed on 1:4 w:v aqueous extracts.
Reported on wet weight.

COPY

Chemist

04/29/10
Date

H19756 TCL RICE

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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:	Rice Operating Company
Project Manager:	Bruce Baker
Address:	122 W. Taylor
City:	Hobbs State: NM Zip: 88240
Phone #:	575-393-9174 Fax #: 575-397-1471
Project #:	Project Owner:
Project Name:	
Project Location:	
Sampler Name:	Robert Egans

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE	ICE / COOL	OTHER:	SAMPLING DATE	SAMPLING TIME	CL	TPH 8015M
H19756-1	5pt Bottom Comp @ 12'	C	1			✓					✓		4-26-10	1:16 pm	✓	✓
2	4-Wall Comp	C	1			✓					✓		4-26-10	1:37 pm	✓	✓
3	Blended backfill	C	1			✓					✓		4-26-10	1:45 pm	✓	✓

Relinquished By:	Date:	Received By:	
Robert	Time:		
Relinquished By:	Date: 4/26/10	Received By: Jodi Henson	
	Time: 3:55		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: ☐ Yes ☐ No; Intact: ☑ Yes ☐ No
CHECKED BY: (Initials) JH

Phone Result:	☐ Yes	☐ No	Add'l Phone #:
Fax Result:	☐ Yes	☐ No	Add'l Fax #:

REMARKS: E-Mail Results To:
JPurvis@Ricesw0.com
BBaker " " " "
REgans " " " "

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

#26

RICE OPERATING COMPANY

122 West Tayor Hobbs, NM 88240
PHONE: (575) 393-9174 FAX: (575) 397-1471
PID METER CALIBRATION & FIELD REPORT FORM

Check Model Number:

	Model: PGM 7300	Serial No: 590-000183		Model: PGM 7600	Serial No: 110-023920
	Model: PGM 7300	Serial No: 590-000508		Model: PGM 7600	Serial No: 110-013744
✓	Model: PGM 7300	Serial No: 590-000504		Model: PGM 7600	Serial No: 110-013676

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO : 927041	EXPIRATION DATE: 11-16-12
FILL DATE: 11-17-09	METER READING ACCURACY: 100

ACCURACY : +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	L-36 EOL	L	36	21S	37E

SAMPLE ID	PID	SAMPLE ID	PID
SB #1			
5'	0.4		
18'	0.4		
21'	0.2		
24'	0.2		
27'	0.2		
30'	0.1		
33'	0.2		
36'	0.4	COPY	
39'	0.5		

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

SIGNATUE: Jordan Woody DATE: 6-11-10

RICE OPERATING COMPANY

122 West Tayor Hobbs, NM 88240
PHONE: (575) 393-9174 FAX: (575) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

Check Model Number:

	Model: PGM 7300	Serial No: 590-000183			Model: PGM 7600	Serial No: 110-023920
✓	Model: PGM 7300	Serial No: 590-000508			Model: PGM 7600	Serial No: 110-013744
	Model: PGM 7300	Serial No: 590-000504			Model: PGM 7600	Serial No: 592-903318

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO:	926547	EXPIRATION DATE:	2-4-2013
FILL DATE:		METER READING ACCURACY:	100ppm

ACCURACY : +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BO	2-36 FOL	B	36	21	37

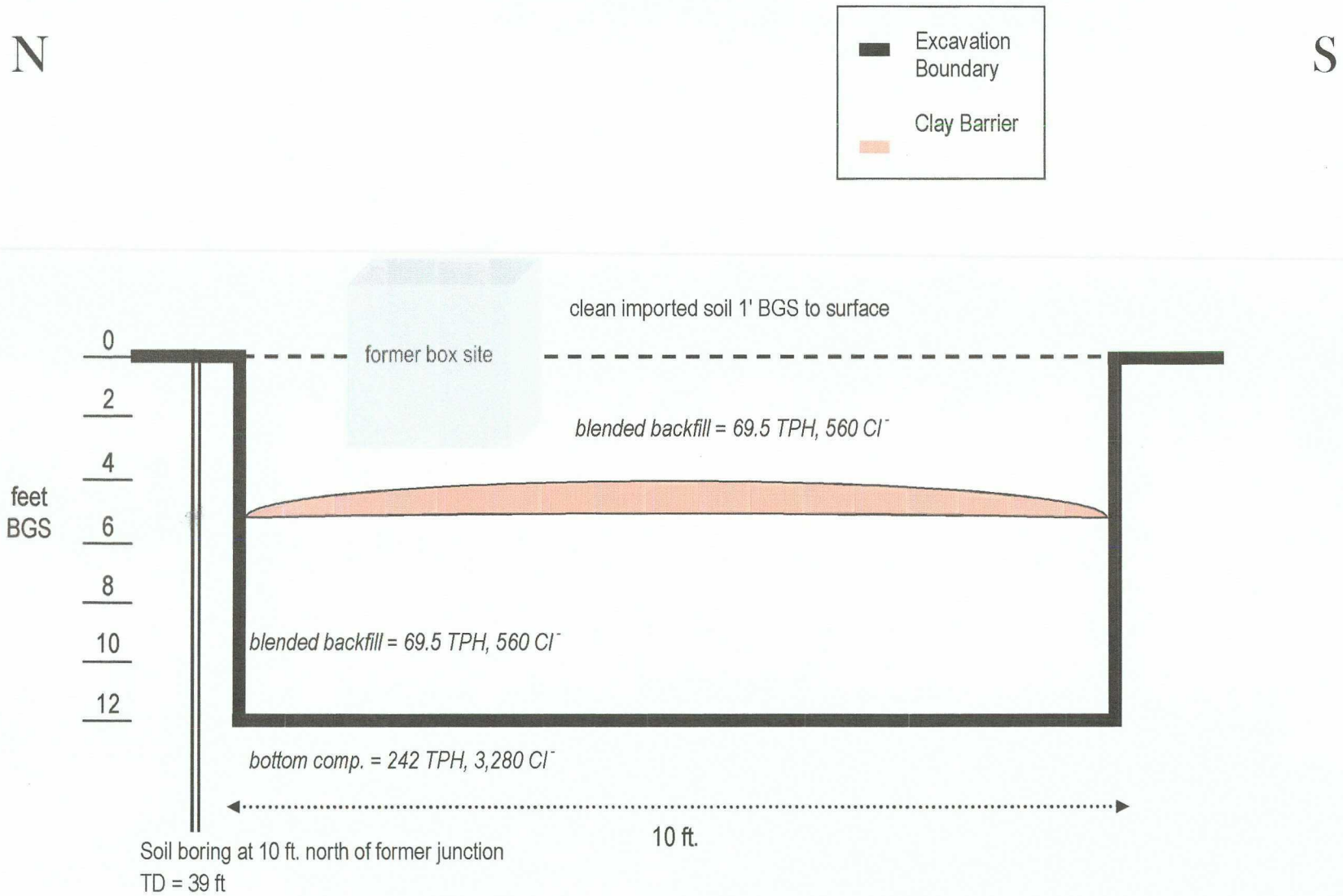
SAMPLE ID	PID	SAMPLE ID	PID
5pt Bottom Composite	4.3		
4-Wall Composite	2.0		
Blended Backfill	6.1		
		COPY	

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

SIGNATUE: Robert Baca DATE: 4-26-2010

BD L-36 EOL
Unit 'L', Sec. 36, T21S, R37E

Excavation Cross-Section



ETTL Engineers & Consultants Inc.

GEOTECHNICAL * MATERIALS * ENVIRONMENTAL * DRILLING * LANDFILLS

HYDRAULIC CONDUCTIVITY DETERMINATION
FLEXIBLE WALL PERMEAMETER - CONSTANT VOLUME
(Mercury Permometer Test)

Project : Pettigrew & Associates, P.A., Hobbs, NM - Project #2010.1028 Report No: 1-1201-000003
Date: 2/5/2010 Panel Number : P.3 ; ASTM D 6084
Project No. : C 4635-101 Permometer Data

Boring No.:		ap =	0.031416 cm2	Set Mercury to Bleed Cm3	Equilibrium	1.8	cm3
Sample:	9540	aa =	0.787120 cm2		Pipet Rp	6.7	cm3
Depth (ft):		M1 =	0.030180	C = 0.000434704	Annulus Ra	1.6	cm3
Other Location:	Wallach Plant Eunice	M2 =	1.040953	T = 0.203790528			

Material Description : Red Clay (Your Sample No 10 1422-1424) Compacted D 698 at 95% of your M/D curve (wet side)

SAMPLE DATA

					Before Test		After Test	
Wet Wt. sample + ring or tare :			561.37	g	Tare No.:	T 5	Tare No.:	T 3
Tare or ring Wt. :			0.0	g	Wet Wt.+tare:	731.90	Wet Wt.+tare:	800.51
Wet Wt. of Sample :			561.37	g	Dry Wt.+tare:	641.75	Dry Wt.+tare:	690.35
Diameter :	2.77	in	7.06	cm2	Tare Wt:	218.78	Tare Wt:	220.69
Length :	2.79	in	7.08	cm	Dry Wt.:	422.97	Dry Wt.:	469.66
Area:	6.04	in^2	38.99	cm2	Water Wt.:	90.15	Water Wt.:	110.16
Volume :	16.84	in^3	275.92	cm3	% moist.:	21.3	% moist.:	23.5
Unit Wt.(wet):	126.65	pcf	2.03	g/cm^3				
Unit Wt.(dry):	104.65	pcf	1.68	g/cm^3				

Specific Gravity: 2.77 Max Dry Density(pcf) = 104.6948 OMC = 21.3135683
% of max = 100.0 +/- OMC = 0.00
Calculated % saturation: 99.58 Void ratio (e) = 0.65 Porosity (n)= 0.39

TEST READINGS

Z1(Mercury Height Difference @ t1): 5.1 cm Hydraulic Gradient = 9.10

Date	elapsed t (seconds)	Z (pipet @ t)	ΔZn (cm)	temp (deg C)	α (temp corr)	k (cm/sec)	k (ft./day)	Reset = *
2/5/2010	4740	6	0.656997	25	0.889	1.17E-08	3.32E-05	
2/5/2010	5940	5.9	0.756997	25	0.889	1.09E-08	3.09E-05	
2/5/2010	6900	5.8	0.856997	25	0.889	1.08E-08	3.05E-05	
2/5/2010	7600	5.7	0.956997	25	0.889	1.08E-08	3.05E-05	

SUMMARY

ka = 1.10E-08 cm/sec Acceptance criteria = 25 %

ki		Vm		
k1 =	1.17E-08	cm/sec	6.3	%
k2 =	1.09E-08	cm/sec	1.2	%
k3 =	1.08E-08	cm/sec	2.5	%
k4 =	1.08E-08	cm/sec	2.5	%

Vm = $\frac{|ka-ki|}{ka} \times 100$

Hydraulic conductivity	k =	1.10E-08	cm/sec	3.13E-05	ft/day
Void Ratio	e =	0.65			
Porosity	n =	0.39			
Bulk Density	γ =	2.03	g/cm3	127.0	pcf
Water Content	W =	0.36	cm3/cm3	(at 20 deg C)	
Intrinsic Permeability	kint =	1.13E-13	cm2	(at 20 deg C)	

Liquid Limit	LL	
Plastic Limit	PL	
Plasticity Index	PI	
- 200 Sieve		%
+ No 40 Sieve		%
+ No 4 Sieve		%

210 Beech Street
Texarkana, AR 71854
870-772-0013 Phone
870-216-2413 Fax

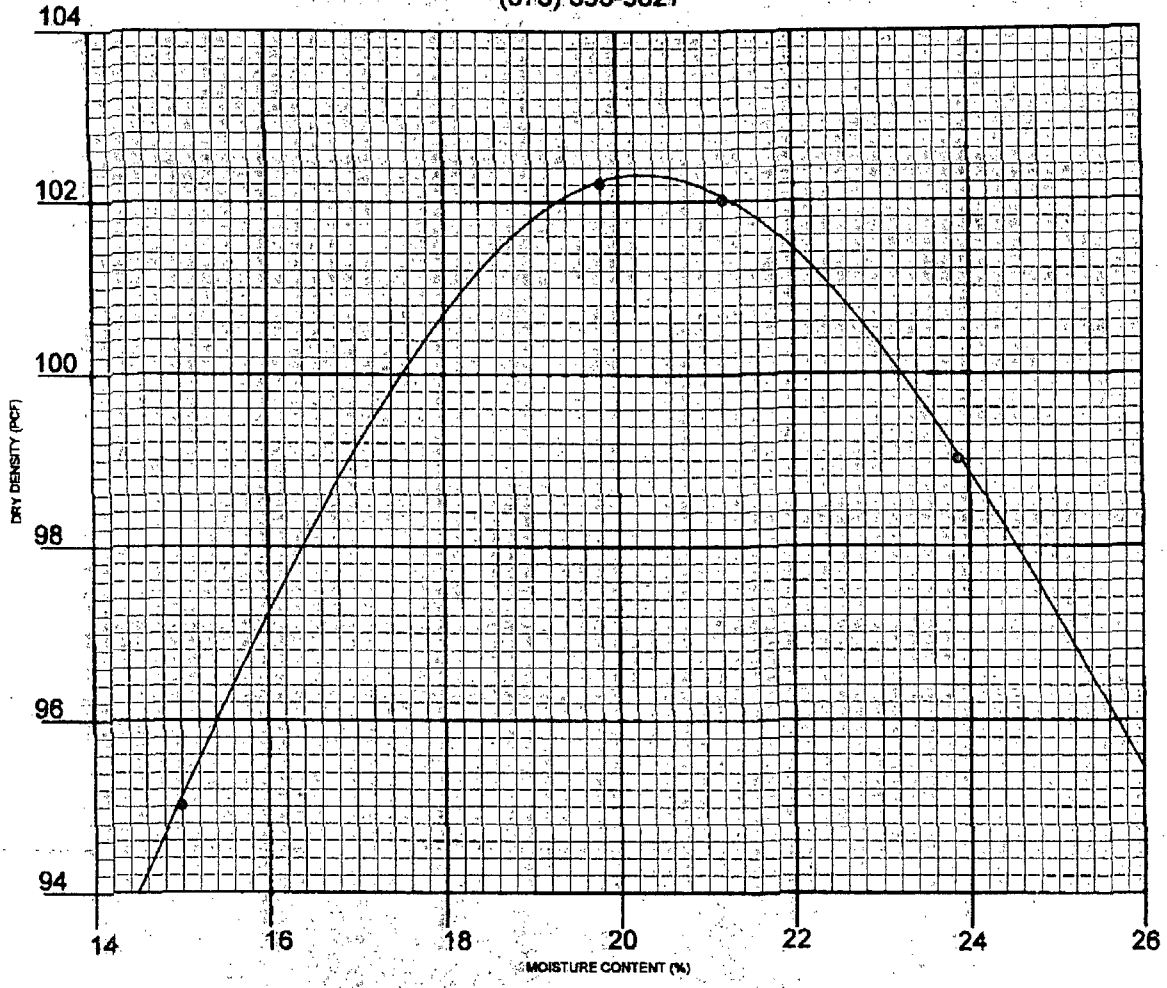
1717 East Erwin
Tyler, Texas 75702
903-595-6421 Phone
903-595-6113 Fax
www.ettline.com

707 West Cotton Street
Longview, Texas 75604-6505
903-758-0615 Phone
903-758-6245 Fax

*Corrected Copy 2/17/10

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

AASHTO R18



General Information

CLIENT: Rice Operating PROJECT: Project No. 2010.1026

SAMPLE LOCATION: Eunice Wallach Plant

SOIL DESCRIPTION: Wallach Red Clay

SOIL CLASSIFICATION: _____ TEST METHOD: ASTM: D 698

ATTERBERG: LL ____ PI ____ Sampled & Delivered 2/8/10

DATE: 2/12/10 LAB NO. 10 1422-1424

DRY WEIGHT LB/CU. FT. 102.3 MOISTURE CONTENT % 20.3

SIEVE ANALYSIS - % PASSING									

PETTIGREW & ASSOCIATES

COPY

BY: Erica McHart

COPIES: Rice Operating

BY: _____ P.E

LABORATORY TEST REPORT

PETTIGREW & ASSOCIATES, P.A.

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

AASHTO R18
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: BDL-36 EOL (21/37)
Project No. 2010.1120

Date of Test: April 29, 2010

Depth: See Below

Depth of Probe: 6"

Test No.	Location	*Dry Density % Max	% Moisture	Depth
SG 1	5' N. & 7' W. of SE Corner of Pit	90.4	17.8	FSG

Control Density: 102.3
ASTM: D 698

Optimum Moisture: 20.3%

Required Compaction: 90-95%

Densometer ID: 5572

Lab No.: 10 4898-4899

Copies To: Rice Operating

PETTIGREW & ASSOCIATES

BY: _____

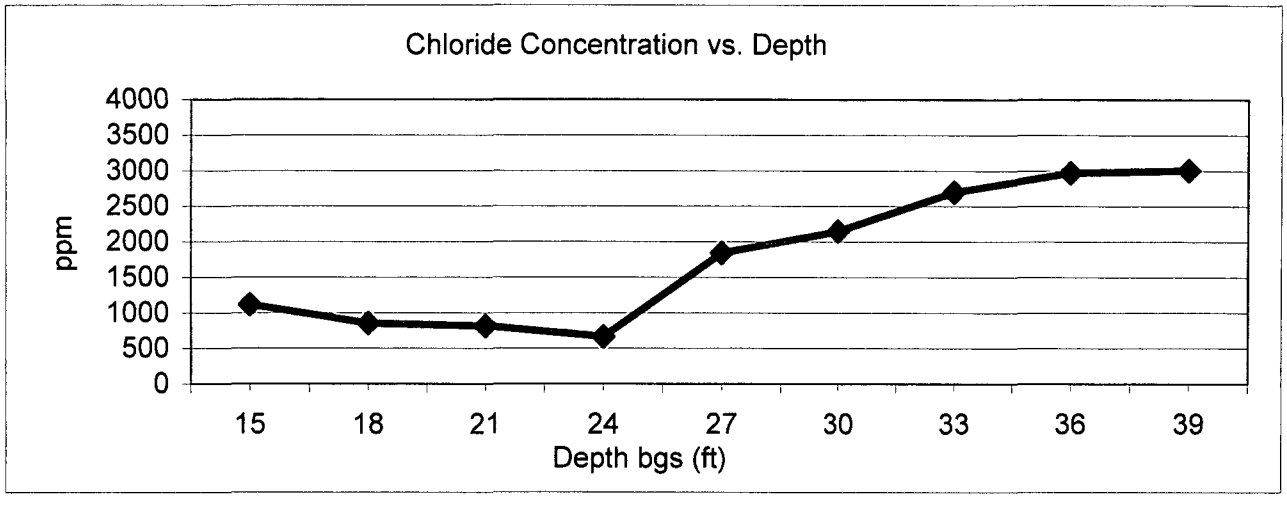
BY: _____ P.E.

BD L-36 EOL

Unit 'L', Sec. 36, T21S, R37E

Soil bore 10 ft. north of former junction box (source)

Depth bgs (ft)	[Cl⁻] ppm
15	1114
18	853
21	811
24	662
27	1841
30	2147
33	2699
36	2970
39	3009



Groundwater = 48 ft.