1R-426-294

REPORTS

DATE:

3-15-11

BD Jct. D-12

/R426-294

2010



۰

RICE OPERATING COMPANY JUNCTION BOX DISCLOSURE* REPORT

				BOX LOCA	TION				
SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DI	MENSIONS	- FEET_
Blinebry-Drinkard	Jct. D-12	D	12	225	37E	Lea	Length 13 ft.	Width 5 ft.	Depth 4 ft.
(BD)					<u> </u>			eliminated	
LAND TYPE: E	BLM	STATE	FEE LA		Walco	Ranch, LLC	OTHER		
						<u></u>			
Depth to Grour	ndwater	<u>59</u> f	eet	NMOCE	SITE ASS	ESSMENT	RANKING SO	CORE:	20
Date Started	10/27	/2010	Date Co	mpleted	12/1/2010		Witness	no	
Soil Excavated	266.7	cubic yard	is Exc	cavation Le	ngth <u>30</u>	Width	20	Depth	12feet
Soil Disposed	150	cubic yard	is Of	fsite Facility	Sun	dance	Location	Eunic	e, NM
AL ANALYTI	CAL RES	SULTS:	Sample	e Date 11/	02/2010, 11/	/11/2010	Sample Dep	oth	12 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	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chlorides mg/kg
4-WALL COMP.	<0.050	0.232	1.15	1.27	81.5	354	160
BOTTOM COMP.	<0.050	0.999	6.3	7.08	337	2,500	944
BACKFILL	<0.050	0.273	0.274	1.14	<50.0	1110	240
BLENDED BACKFILL		PID	= 29,4		<10.0	726	N/A

General Description of Remedial Action: This junction was eliminated during

the pipeline replacement/upgrade program. After the junction box was removed, an investigation was conducted using a backhoe to collect soil samples at regular intervals creating a 30X20X12-ft. deep excavation. Chloride field tests were performed on each sample yielded relatively low concentrations. Organic vapors were measured using a PID, which yielded elevated concentrations. The 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. Then continued blending the backfill on site and collected a representative sample from the blended backfill and sent to a commercial laboratory for analysis of TPH. The excavation was backfilled to 5.5 ft. below ground surface (BGS). At 5.5 ft. , a 1 ft-thick clay barrier was installed with compaction test performed on 11/29/2010. The remaining blended

CHLORIDE FIELD TESTS

LOCATION	DEPTH	mg/kg
4-wall comp.	n/a	152
bottom comp.	12	554
backfill comp.	n/a	204
background	6"	151
	4'	145
vertical	6'	151
delineation 10 ft. west of junction	8'	201
(source)	10'	277
	12'	404

backfill was hauled to a NMOCD approved facility. The remaining excavation was backfilled with clean imported soil to ground

surface and contoured to the surrounding area. An identification marker was placed on the surface at the former junction box to mark

the presence of clay below. On 12/01/2010 the site was seeded with a blend of native vegetation and is expected to return to a

productive capacity at a normal rate. NMOCD was notified of potential groundwater impact on 3/02/2011.

ADDITIONAL EVALUATION IS HIGH PRIORITY

enclosures: photos, lab results, PID screenings, cross-section, compaction results, hydraulic conductivity, proctor, BTEX comparison study, chloride curve

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

SITE SUPERVISOR	John Harrison	SIGNATURE		Not Available	COMPANY	RICE OPERATING COMPANY
REPORT ASSEMBLED BY	Larry Bruce Baker Jr.	INITIAL	LBB			
PROJECT LEADER	Larry Bruce Baker Jr.	SIGNATURE	Lany	Buce Baker fr.	DATE_	3-15-11

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

BD JCT. D-12

Unit D, Section12, T22S, R37E

Site prior to delineation

10/27/2010



Collecting sample



11/29/2010

Seeding site

Installing clay liner



12/1/2010





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:	11/02/2010		Sampling Date:	11/02/2010
Reported:	11/09/2010		Sampling Type:	Soil
Project Name:	BD D-12 JCT (22/37)		Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	•	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN			
		.*		

Sample ID: 5 PT. BOTTOM COMP (H021214-03)

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	11/05/2010	ND	2.27	114	2.00		
Toluene*	0.999	0.050	11/05/2010	ND	2.09	104	2.00		
Ethylbenzene*	6.30	0.050	11/05/2010	ND	2.04	102	2.00		
Total Xylenes*	7.08	0.150	11/05/2010	ND	6.09	101	6.00		
Surrogate: 4-Bromofluorobenz	ene (PIL 153 9	80-12	20 Contraction of the second	a state a second	1 6 1				
Chloride, SM4500Cl-B		生きもんが	Analyzed E	by: HM Method Blank	s BS	% Recovery	True Value QC	RPD	Qualifie
Chloride, SM4500Cl-B Analyte Chloride	mg/	(kġ Reporting Limit 16.0	Analyzed E	Method Blank	BS 432	% Recovery	True Value QC	RPD 3.77	Qualifier
Chloride, SM4500Cl-B Analyte Chloride	mg/ Result 944	(kġ Reporting Limit 16.0	Analyzed E Analyzed 11/03/2010 Analyzed E	Method Blank		•			
Chloride, SM4500CI-B Analyte Chloride TPH 8015M	mg/ Result 944 mg/	'kġ Reporting Limit 16.0 'kg	Analyzed E Analyzed 11/03/2010 Analyzed E	Method Blank ND Sy: AB	432	108	· 400	3.77	Qualifier Qualifier

Surrogate: 1-Chlorooctadecane

109.% 70-130



Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages, Cardinal's liability and clent's exclusive remedy for any daim anising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be idented waived unless made in writing and received by Cardinal within 'thirty (30) days after completion of the applicable service. In no event shall Cardinal be lable for incidental or consequential damages, including, without limitation, business interruptions, iloss of use, or iloss of profils incurred by Cardinal within 'thirty (30) days after completion of the applicable service. In no event shall Cardinal be lable for incidental or consequential damages, including, without limitation, business interruptions, iloss of use, or iloss of profils incurred by Cardinal within the constraint control or a related to the performance of the services hereunder by Cardinal, regardless of whether such daim is based upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reprodued except in fdd whitten approval of Cardinal Longrations.

Celen

Celey D. Keene, Lab Director/Quality Manager

PHONE (575) 393-2376 ° 101 E. MARLAND ° HOBBS, NM 88240 CARDINAL Laboratories Analytical Results For: Rice Operating Company 11/02/2010 Bruce Baker 112 W. Taylor Hobbs NM, 88240 (575) 397-1471 soil Cool & Intact Sampling Date: Jodi Henson Sampling Type: Fax To: Sampling Condition: Sample Received By: 11/02/2010 Qualifier 11/09/2010 BD D-12 JCT (22/37) RPD Received: True Value QC NONE GIVEN Reported: % Recovery NOT GIVEN project Name: 2.00 Analyzed By: cms project Number: 85 Method Blank 114 2.00 -Sample ID: 4 WALL COMP (H021214-04) project Location; 2.27 Analyzed 104 2,00 ND mg kg 2.09 Reporting Limit 11/05/2010 102 6:00 ND 2:04 11/05/2010 101 0.050 BTEX BO21B ND 6.09 <0.050 Qualifier 11/05/2010 0.050 ND Analyte 0.232 11/05/2010 RPD 0.050 True Value QC Benzene* 3.77 1.15 0,150 % RECOVEN Toluene* Analyzed By: HM 400 1.27 Qualifier 80-120 85 Ethylbenzene* Method Blank 108 RPD 108 % Total Xylenes* 432 True Value QC Surrogale 4-Bromolluorobenzene (PIL Analyzed mgikg ND 16.6 Reporting Limit % Recovery 11/03/2010 200 Analyzed By: AB 3.36 BS chloride, SM4500Cl-8 Result Method Blank 16.0 97.7 200 . The 160 195 75.9 Analyzed Analyte mg/kg ND 152 Reporting Limit 11/05/2010 Chloride ND 11/05/2010 Result 50.0 TPH BO15M 81.5 50:0 Analyte COPY 354 70-130 GRO C6-C10 · 10% 70-130 DRO >C10-C28 Surrogate: 1-Chloroactane 107 % Surrogate: 1-Chlorooctadecane *= Accredited Cardinal Laboratories PLEASE NOTE 7. Kure daim is base A ĥ





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:	11/02/2010	Sampling Date:	11/02/2010
Reported:	11/09/2010	Sampling Type:	Soil
Project Name:	BD D-12 JCT (22/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: BLENDED BACKFILL (H021214-05)

BTEX 8021B mg/kg Analyzed By: cms

				S/ 5	T. 1/-1 00	DDD	0 116
Analyte	Result Reporting Limit	Analyzed Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050 0.050	11/05/2010 ND	2.27	114	2.00		
Toluene*			2.09	104	2.00		
Ethylbenzene*	0.274 0.050	11/05/2010 ND	2.04	102	2.00		
Total Xylenes*	1.14 0.150	.11/05/2010 ND	6.09	101	6.00		
					where where the second statement is a statement of		

Surrogate: 4-Bromofluorobenzene (PIL 113 % 80-120

OCI-B		mg/l	kg	Analyze	d By: HM					
lyte	· • • • • • • • • • • • • • • • • • • •	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
· · ·		240	16.0	11/03/2010	ND	432	108	400	3.77	
		mg/i	kg	Алајуze	d By: AB					
yte		Result	· Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
•	s - 194	<50.0	50.0	11/05/2010	ND	195	97.7	200	16.6	
B		1110	50.0	11/05/2010	ND	152	75.9	200	3.36	
	yte yte	yte yte	DCI-B mg/ yte Result 240 mg/ yte Result <50.0	DCI-B mg/kg yte Result Reporting Limit 240 16.0 mg/kg yte Result Reporting Limit <50.0 50.0	DCI-B mg/kg Analyze yte Result Reporting Limit Analyzed 240 16:0 11/03/2010 mg/kg Analyzed yte Result Reporting Limit Analyzed 50:0 50:0	DCI-B mg/kg Analyzed By: HM yte Result Reporting Limit Analyzed 240 16.0 11/03/2010 ND mg/kg Analyzed By: AB yte Result Reporting Limit Analyzed By: AB	DCI-B mg/kg Analyzed By: HM yte Result Reporting Limit Analyzed Method Blank BS 240 16.0 11/03/2010 ND 432 mg/kg Analyzed By: AB yte Result Reporting Limit Analyzed Method Blank BS <	DCI-B mg/kg Analyzed By: HM yte Result Reporting Limit Analyzed Method Blank BS % Recovery 240 16.0 11/03/2010 ND 432 108 mg/kg Analyzed By: AB yte Result Result Reporting Limit Analyzed Method Blank BS % Recovery <50.0	DCI-B mg/kg Analyzed By: HM yte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC 240 16.0 11/03/2010 ND 432 108 400 mg/kg Analyzed By: AB yte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC <50.0 50.0 11/05/2010 ND 195 97.7 200	DCI-B mg/kg Analyzed By: HM yte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD 240 16:0 11/03/2010 ND 432 108 400 3.77 mg/kg Analyzed By: AB yte Result Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD <50.0

Surrogate: 1-Chlorooctane110 %70-130Surrogate: 1-Chlorooctadecane1.05 %70-130



Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: ... Liability and Damages. Cardinal's lability and clent's exclusive remedy for any claim ansing, whether based in contract or tort, shall be limited to the amount paid by clent for analyses. All claims, including those for negligence and any other cause whatsoever shall be deened walved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, tousness interruptions, loss of use, or loss of profits incurred by clerit, its subsidianes, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such dam is based upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reprodued to except in full with writem approval of cardinal to arise resources to the services in the services of the services in the ser

Celus, en

Celey D. Keene, Lab Director/Quality Manager

Page 5 of 8

+ Cardinal o	Relinquished By: Delivered By: (Circle One) SampleD UPS - Bus - Other	Robert	Relinguisted By	analyses, All olaims including those د service. In no وَبِعَرَة مَالًا Cardinal b a filliates or successors arising میلیما	PLEASE NOTE: Liability and Damages.					4	0		H217143	Lab I.D.	FOR LAB USE ONLY	Sampler Name: Robert Harrison	Project Location:	Project Name:	Project #:	Phone #: 575-393-9174	city: Hobbs	Address: 122 V	Project Manager:	Company Name:	AR
annot accept verbal change	Circle One)	Flarrison Time	Date								BLENDED BACK	4 WALL COMP	SAT BOTTOM CO.	Sample I.D.		obert Harrison			Proje			122 West Taylor	Hack Conder Bauce	Rice Operating Company	RDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476
Cardinal cannot accept verbal chances. Please fax written chances to 505-393-2476	210 Received By 35 JOU M Sample Conditio Cool Intact Bytes Pres		1210 Received By:	for negligatore and any otar; cause whatsover shall be detened valved unless made in withing and created within 30 days after completion of the e liable for incidental or consequential dismaps, including without initiation, business, interruptions, loss of use; or loss of profits incurred by offert, this studied and or related to the performance of tervices Interunder by Cardinal, regardess of whether such claim is based uppon any of the above stated reasons of otherwise.	client's exclusive remedy for any claim arising whether based i						1 1 1 V	61	N C /	(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL	MATRIX				Project Owner:	Fax #: 575-397-1471	State: NM Zip: 88240		BACER		40 76
C No C V V es to 505-393-2476	Condition CHECKED B Condition CHECKED B Innact Innact S Pres			s in writing and received by Cardinal within 30 i interruptione, loss of use, or loss of profils incu er such claim is based upon any of the above s	In contract or tort, shall be limited to the an						v 1//2	E/// 2	- 194 - - - 194 - 194	OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :	PRESERV	Fax #:	Phone #:	State: Zip:	City:	Address:	Attn:	Company:	P.O. #:	BILL	2111 Beechwood, Abilene, TX 79603 (325) 673-7001 FAX (325)673-7020
	email results Bbaker@rice Regans@rice	REMARKS:	Phone Result:								 102:50 0	110 2:45 ~	10 2:05 4	DATE	SAMPLING	olr	ric	de	S					70	
	esults @riceswd.com; \$@riceswd.eem	۲۰۰۰ ۲۰۱ ۲۰۰۰ - ۲۰۰۱ ۲۰۰۱ - ۲۰۰۱		applicable			2 2.9 2.9		-		 5	1	*	*					M						
	wd.c		5 15 5 15	- 574 - 575 	4 / No. 4			4			۲	7	٩		ł	ЗТ	Ε	Х				••••••		-	
	mee mee		No		2. 2. 20 Ja	ر میں ر								Т	e	kas	5	ΓP	H						
* j	esults @riceswd.com; Kjones@riceswd.com; @riceswd.com; Kjones@riceswd.com;		Add'l Phone #: ***											Complet	:e	Ca	ati	on	is//	<u>An</u>				ANALYSIS REQUEST	

2 et 2



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

1			4. 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947
Received:	11/02/2010	Sampling Date:	11/02/2010
Reported:	11/09/2010	Sampling Type:	Soil
Project Name:	BD-D-12 JCT (22/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		·

Sample ID: PT 1-5 PT BOTTOM COMP (H021214-01)

		·····							
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<0.050	0.050	11/05/2010	ND	2,26	113	2.00	t		
0,357	0.050	11/05/2010	ND	2.11	106	2.00			
<0.050	0.050	11/05/2010	ND	2.06	103	2.00			
0.153	0.150	11/05/2010	ND	6.23	104	6.00			
	Result <0.050 0.357 <0.050	Result Reporting Limit <0.050	Result Reporting Limit Analyzed <0.050	Result Reporting Limit Analyzed Method Blank <0.050	Result Reporting Limit Analyzed Method Blank BS <0.050	Result Reporting Limit Analyzed Method Blank BS % Recovery <0.050	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC <0.050	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD <0.050	

Surrogate: 4-Bromofluorobenzene (PIL 97.1 % 80-120

\$ 7.1 Sample ID: N, S, E, W, WALL COMP (H021214-02)

BTEX 8021B	1.	a standar and the	mg/kg	Analyzed By: cms

Anaiyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.119	0,050	11/05/2010	ND	2.26	113	2.00		
Toluene*	1.85	0.050	11/05/2010	ND	2.11	106	2.00		
Ethylbenzene*	1.38	0.050	11/05/2010	ND	2.06	103	2.00		
Total Xylenes*	5.38	0.150	11/05/2010	ND	6.23	104	6.00		

Surrogate: 4-Bromofluorobenzene (PIL 116%

Cardinal Laboratories

80-120



*='Accredited Analyte

PLEASE NOTE: Liability and Damages "Cardinal's flability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the an unt paid by dient for, Including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after, completion of the applicable service. In no event shall Cardinal be liable for incidental or consecuntial damanes including, without limitation, business interruptions, loss of use, or loss of profits incurred by dient, its subsidi dam is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report s affiliates or successors anising out of or related the perfo ies, the services hereunder by Cardinal, regardless of whether such report shall not be reproduced except in full with w

elier

- C.

	101 East Marland, Hobb (505) 393-2326: FAX (5 Company Name: Rice Operating Company Project Manager: Haek-Cender 2020	d, Hobbs, NM 88240 FAX (505) 393-2476 Company	2111 Beechwood, Abilene, TX 79603 (325) 673-7001 FAX (325)673-7020 BILL TO P.O. #:		ANALYSIS
Outverholds Sinter NM. Zip. 86240 Attra: Project #: Project Ame: Frace 575-397-1471 Address: Project Ame: Project Ame: Project Ame: State: Project Ame: Project Ame: Project Ame: State: Project Ame: Project Ame: Project Ame: Project Ame: Project Ame: Project Ame: Project Ame: Project Ame: Sample Location: Sample LD: Sample LD: Project Ame: Project Ame: Sample Lacation: Sample LD: Bartic Counce: Project Ame: Project Ame: Sample Lacation: Sample LD: Bartic Counce: Project Ame: Project Ame: Sample LD: Sample LD: Bartic Counce: Project Ame: Project Ame: Lab LD: Sample LD: Bartic Counce: Project Ame: Project Ame: Lab LD: Sample LD: Bartic Counce: Project Ame: Project Ame: Lab LD: Sample LD: Bartic Counce: Project Ame: Project Ame: Lab LD: Sample Lab Counce: Project Ame: Project Ame: Project Ame: Lab LD: Harris Counce: Sample Lab Counce: Project Ame: Project Ame: Lab LD: Harris Counce: <th>2</th> <th>BRUE BAKE</th> <th>#: panv:</th> <th></th> <th></th>	2	BRUE BAKE	#: panv:		
Phone #: 575-393-9174 Fix #: 575-397-1471 Address: Project Name: Griget Owner: Charles Project Name: Griget Owner: Project Owner: Project Owner: Project Name: Griget Owner: Project Owner: Pr	City: Hobbs		Attn:		
Project Name: Froject Owner: City: Project Name: GU / 2.2.3.7 State: Tp: Sampler Location: Formail: Formail: State: Tp: Sampler Location: Formail: Formail: Formail: Formail: Sampler Location: Sampler Location: Formail: Formail: Formail: Lab LD. Sampler Location: Gill Control Control Formail: Formail: Lab LD. Sampler Location: Gill Control Control Formail: Formail: Lab LD. Sampler Location: Gill Control Control Formail: Formail: Lab LD. Sampler Location: Gill Control Control Formail: Formail: Lab LD. Sampler Location: Gill Control Control Formail: Formail: Lab LD. Sampler Location: Gill Control Control Formail: Formail: <t< td=""><td>Phone #: 575-393-9174</td><td>Fax #: 575-397-1471</td><td>Address:</td><td>-</td><td></td></t<>	Phone #: 575-393-9174	Fax #: 575-397-1471	Address:	-	
Project Name: CAL D.T. State: Zip: Project Location: Robert Harrison Prove or one of the state in the s	Project #:	Project Owner:	City:		
Englet Location: Phone #: Sampler Name: Robert Harrison Fax #: Prove use out Fax #: Prove use out Fax #: Prove use out Sampler Ibn Sampler Name: Robert Harrison Fax #: Prove use out Sampler Ibn Lab Ibn Sampler LD Lab Ibn Sampler LD Lab Ibn Sampler LD Lab Ibn Sampler LD Lab Ibn Sampler Lab Ibn Lab Ibn<	300-	52 22		15	ΓP
Sample Neme: Robert Harrison Fax #: require our Sample I.D. Lab I.D. Sampl			- N	30	s ¯
Polynome out MITRIX PRESERV SAMPLING Lab I.D. Sample I.D. Image: Contract of the second			Fax #: (2) ***	1.8	ka
Lab I.D. Sample I.D. H2ITUH:			PRESERV.	<u>-</u>	e×
Lab I.D. Sample I.D. H217LH4: NT H217LH		RS R	1. 3 ¹ 1. 3		
AT 105 507 607 10		G)RAB.OR (C CONTAINER ROUNDWAT VASTEWATE OIL	LUDGE THER : CID/BASE DE / COOL THER :		
IC B F J	114-116	The second of th	0/2/11 ~	310 / /	4
Image: Soft Control Image: Soft Control<	10 Boy 3 07	17/ 101 (000 10 1 - 101 / 1/			X
UMAL Gampo 1<	10 H Pr 4 00-5	$1 \times 1 \times 1$	11/2/10	23	
WALL Composition 1 <th1< th=""> 1 <th1< th=""></th1<></th1<>	7 A N WALL	Com/2 C /	1/2/10	20	
Dranges: Cardinal's japility and clearts exclusive remedy for any dam analog whether based in contract or not shall be linited to the amount haid by the deprivation of the section of th	26 E wall	Comp (1)	olte/11	40	
Relinquished By: Date: Date: Received By: Phone Result: P ves P No Relinquished By: Pare Phone Result: Pare Phone Result: P ves P No P N	NOTE: Liability and Damages. All slaims including those for n n no event shall Cardinal be liab or successors arising out of or re	claim arising whether based inned waived unless made in inhout limitation, business inte linal, regardless of whether s	act or fort, shall be limited to the amount and cereived by Cardinal within 30 days a, loss of use, or loss of profits incurred a is based upon any of the above state	phicat	
Circle One) Date 2/10 Received By: Umage: August of the second sec	H H		Fax Rein		No
- Bus - Other:	· · · · · · · · · · · · · · · · · · ·	Date 2/10 R	<u>}</u>	ail results	
	: (Circ - Bus		CHECKED BY:	aker@riceswo gans@riceswo	

.....

1 of Z





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

	and the second	
Received:	11/11/2010	
Reported:	11/17/2010	
Project Name:	BD D-12 JCT (22/37)	
Project Number:	NONE GIVEN	
Project Location:	NOT GIVEN	

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

Sample ID: BLENDED BACKFILL (H021279-01)

小月月 建酸酸酸

TPH 8015M mg/kg Analyzed By: AB

1. 医外外的 化丁基苯甲

Analyte	Reporting Limit	Änalyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10 <10.0	10.0	11/15/2010	ND	153	76.7	200	14.7	
DRO >C10-C28	10.0	11/15/2010	ND	156	78.1	200	14.2	
		· ``						

Surrogate: 1-Chlorooctane	115 %	70-130
Surrogate: 1-Chlorooctadecane	117 %	70-130



Cardinal Laboratories

*=Accredited Analyte

PLEXE NOTE: Liability and, Damages. Cardinal's liability and client's exclusive remedy for any daim anising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whitsoever shall be deemed waved unless made in writing and necebved by Cardinal within thirty (30) days after completion of the applicable service. In no event, shall Cardinal be liable for incidental or consequential 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 the services hereunder by Cardinal, repardless of whether such dam's based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This reproduced except in full with written approval of Cardinal Laborations.

Celey rene

Celey D. Keene, Lab Director/Quality Manager

Page 2 of 4

	೧
ł	T
ł	⋗
	<
	Z
	Ţ
ł	\mathbf{O}
1	
I	Y
	•••
1	<u> </u>
	USTC
ł	
ļ	0
ł	Ē.
[2
1	
	\geq
1	Z
	AND ANALYSIS
1	2
	\mathbf{P}
	Z
1	\geq
. [Ē.
	~
	cò.
	<u> </u>
	S
1	77
	\simeq
	Π.
	REQ
	REQUES
ł	
1	Ĩ.
I	

10

A

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

	<u></u>	1					1		·			<u>, </u>	-	1.70		0			
† Cardinal	Delivered By Sampler - UPS	Relinquished By:	prease Note: Liablity and Damages analyses All claims including those for n service. In no event shall Cardinal be tal	5			NEIEITI	5	Lab I.D.	FOR LAB USE ONLY	Sampler Name:	Project Location	Project Name: X30	Project #:	Phone #: 575-393-9174	city: Hobbs	Address: 122	^o roject Manager	Company Name:
Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476	Delivered By: (Circle One) ampler - UPS - Bus - Other:	HHAIP I AND A HAIP	PLEASE NOTE: Liability and Damages: Cardinals liability and dhents exclusive remedy for any claim ansing whether based in contract or tort she makes: Al claims including those for negligence and any other cause whatsoever shall be deemed walved unless made in writing and received b envice. In ne went shall Cardinal pe table for incidental or conserving and dana and the deemed walved unless made in writing and received b				NENNEN K	<u> </u>	Sample I.D.		Robert Harrison		30 0-12 52		93-9174		122 West Taylor	Project Manager: Haek-Conder . X3	Rice Operating Company
changes. Please	Time:	Date:	ant's exclusive remedy for a cause whatsoever shall be c quental damages, including					2 visas allas	D				r 22.37	Project Owner:	Fax #: 575-397-1471	State: NM		E.	pany
· fax written changes	Sample Condition Cool Intact Yes IV Yes	Received By Received By	diferits exclusive remedy for any claim ansing whether based in con- or cause whatsoever shall be deemed wolved unless made in writing work of the second o						G)RAB OR (C)OMF CONTAINERS GROUNDWATER NASTEWATER SOIL DIL	MATRIX			4		7-1471	Zip: 88240		GARER	
to 505-393-2476	dition CHECKED BY:	UCULOUS	I be limited to the or loss of profils i							PRESERV. SAMPLING	Fax #:	Phone #:	State: Zip:	City:	Address:	Attn:	Company:	P.O. #:	BILL TO
NE	Bbaker@riceswd.com; Regans@riceswd .com		arriount paid by the client for the ap go days after completion of the ap nourred by client, its subsidiaries						TIME				de						
NEED	Drice Orice	sults	plicable					<											
ia j	eswd	Yes	a a a a a a a a a a a a a a a a a a a			3.		4		I		TE	15 X						
MP	.com	NO OS								Те			TP	Ή					
SAMPLES	i .	Add 1							Comple						٩n	ior	าร		ANA
ΒA	Kjones@riceswd	Add'l Phone # Add'l Fax #:				SP													ANALYSIS
ВАСК,	s@rices					\square													REQ
N 8 4					Ť														REQUEST
PLEASE	.com;										· · · ·								
E E								-											
	Coord							_											
	L															_			

#26

		e.			
• • • • •			FING CON	IPANY	
	PHONE:	(505) 393-9174	obbs, NM 88240 FAX: (505) 397-147 & FIELD REPORT F		
CK. MODEL NO.	MODEL: PGM 7300 MODEL: PGM 7300 MODEL: PGM 7320 MODEL: PGM 7300	SERIAL SERIAL SERIAL	and the second		
·	GAS COMPOSITIC	DN: ISOBUTYL	ENE 100PPM / AIR: I	1 11 13	
LOT NO :	430737		EXPIRATION DATE:	<u>6-16-13</u>	
ACCURACY : +/- 2		TER READIN	G ACCURACY: [
SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	D-12	\mathbb{D}^{2}	12	22	37
SA	MPLE ID	PID	SA	MPLE ID	PID
Bottom 5	of Composite	265.6			
4pt D	all compusite	130.5		····	
Blande 1	Stekfill	1896			
	n en				
					<u>+</u>
	· · · · · · · · · · · · · · · · · · ·				
			CO	DV	
· · · · · · · · · · · · · · · · · · ·					
	· · · · · · · · · · · · · · · · · · ·				

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

S 3 1

Jon Grayer SIGNATURE: D

۰.

DATE: 11-2-10

RICE OPERATING COMPANY

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

Model: PGM 7300 Seri Model: PGM 7300 Seri Model: PGM 7300 Seri

Check Model Number: Serial No: 590-000183 Serial No: 590-000508 Serial No: 590-000504

Model: PGM 7600 Model: PGM 7600 Model: PGM 7600

 00
 Serial No: 110-023920

 00
 Serial No: 110-013744

 00
 Serial No: 110-013676

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE LOT NO: 930737 EXPIRATION DATE: 6/16/13 METER READING ACCURACY: 100.0

ACCURACY : +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	D-12	D	12	225	37E

SAMPLE ID	PID	SAMPLE ID	PID
SAMPLE ID BLENDED BACKFEU	29.4		
· · · · · · · · · · · · · · · · · · ·			
<u></u>			
			\bigvee
			<u> </u>

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

SIGNATUE:

DATE: 11/11/10

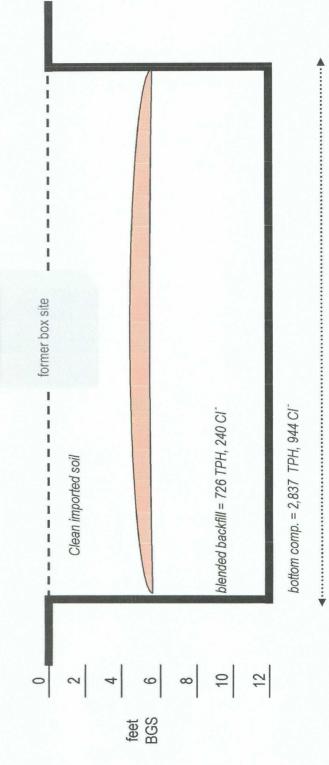
BD Jct. D-12 Unit 'D', Sec. 12, T22S, R37E

Excavation Cross-Section

Z



5



30 ft.

THE RUNN	PETTIGRE	ATORY TEST REPORT W & ASSOCIATES, P 1110 N. GRIMES OBBS, NM 88240 (575) 393-9827	DE	ABHTO RIB EBRA P. HICKS, P.E./L.S.I. LIAM M. HICKS. III, P.E./P.S.
To:	Rice Operating Company 122 W. Taylor Hobbs, NM 88240	Materiai:	Wallach Red Clay	
		Test Method:	ASTM: D 292	22
Project:	BD Junction D-12 (22/37) Project No. 2010.1353			
Date of Test:	November 29, 2010	Depth:	See Below	
		Depth of Prob	e : 6"	
Test No.	Location	Dry Density % Max	% Moisture	Depth
SG 1	8' N. & 5' E. of SW Come	r 94.2	11.9	FSG



Optimum Moisture: 19.0% **Control Density:** 101.1 ASTM: D 698 Required Compaction: 90-95% Densometer ID: 5071 **PETTIGREW & ASSOCIATES** 10 11584-11585 Lab No .: BY: Copies To: **Rice Operating** P.E. BY:

	Office: (903) 210 Beach Street 707 West Cotton S	595-4421 Lab: (903) 595 <u>Area Offices</u> Texarkana, AR	•
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, S		Order Number:	
Client: Pettigrew & Associates, Hobb	•		
Contractor: Not Given	,		
REPORT: FLEXIBLE WALL PERMEAN	ETER	LAB NO:	9881
	· · · · · · ·		See Below
(4) A start of the second sec second second sec			
	TEST RESULTS	Report No: Page 1 of 2	1-1201-000005
		• •	
	CONDUCTIVITY DETER PERMEAMETER - CONS		
	ercury Permometer Test		
Project : Rice Operating Project 2010.1028			
Date: 8/25/2010 Project No. : C 4535-101 Permometer		ASTM D 5084	
Boring No.: ap =	I Web D	eroury to Equilibrium	1.8 cm 3
Sample: 9881 88 = Depth (ft): M1 =		Pipet Rp 00448509 Annulus Ra	6.7 cm3 1.5 cm3
Other Location: Wallach Pit M2 =	= 1.040953 T = 0.2	03785086	
Material Description : Red Clay (Clients	Sample No 10 5904-5908) Lab N	lolded @~95% ASTM D	398
SAMPLE DATA			
Wet Wt. sample + ring or tare : 507.52 Tare or ring Wt. : 0.0 Wet Wt: of Sample : 507.52 Dlameter : 2.72 in Length : 2.75 in Area: 5.79 in^2 37.35 Volume : 15.94 in^3 261.23 Unit Wt.(wet): 121.23 pcf 1.94 Unit Wt.(dry): 95.36 pcf 1.53	g Tare cm2 Wetv cm Dry V cm2 Tare cm3 Dry V	No.: T 9 Ta vt.+tare: 850.96 wr vt.+tare: 716.43 Dr Wt: 220.51 Ta Vt.: 495.92 Dr r wt.: 134.53 wr	Rer Test ire No.: T 2 at Wi.+tare 728.58 y Wi.+tare 621.60 ire W I: 216.59 y Wt.: 405.01 ater WI.: 108.98 moist.: 26.4
Assumed Specific Gravity: 2.85 Max Dry	 Density(pcf) =101.1	OMC = 19	
Calculated % saturation: 95.26 Void ratio (e		/- OMC = 8.13 ity (n)= 0.42	
		· · · ·	
		·	
	- 		
	$\bigcirc \bigcirc \bigcirc$		· · ·
			.
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		•	

_ _ ____

1

THIS REPORT APPLIES ONLY TO THE STANDARDS OR PROCEDURES INDICATED AND TO THE SAMPLE(S) TESTED AND/OR OBSERVED AND ARE NOT NECESSARILY INDICATIVE OF THE QUALITIES OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS OR PROCEDURES, NOR DO THEY REPRESENT AN ONGOING QUALITY ASSURANCE PROGRAM UNLESS SO NOTED. THESE REPORTS ARE FOR THE EXCLUSIVE USE OF THE ADDRESSED CLIENT AND ARE NOT TO BE REPRODUCED WITHOUT WRITTEN PERMISSION.

					Office: ((903) 595-44 21	Home Offi Lab: (903) 59 Area Offices	Tyler, 1	East Erwin 300 Fexas 76702-639 IX: (903) 595-611
					210 Beech Si 707 West Co		Texarkana, A Longview, TX		(870) 772-0013 (903) 758-0402
cct ID:	PETTIGRE	 =\A/	F	ile ID: C453	5-101		Date Sampled	4. 08/40/2/	010
					0-101		Sampled By:	Client	510
•	: 08/27/2010		n Declarated	10040 4000	lisha kiki		• •		
roject:	•			2010.1026,	-	1	By Order Of:	Erica Ha	art
ocation:		-		imple Locati	on: N/G		Order Numbe		
Client:	-		tes, Hobbs,	, NM					
Contractor:	Not Given								<u></u>
REPORT:	FLEXIBLE	WALL P	ERMEAME	TER			LAB NO:	9881	
	· · • • •		2 - E				Test Method:	See Be	ow
							Report May	4 4704	000005
				T	eqt deqii	1 7 8			
			-	Т	EST RESU	LTS	Report No: Page 2 of 2	1-1201-	000005
			-	Т	est resu	LTS	Page 2 of 2	1-1201-	000005
TEST READI							Page 2 of 2	1-1201-	
TEST READII Z1(Mørcury H		nce @ t1):	5.1	T cm		LTS Gradient =	•	1-1201-	
	leight Differer	nce @ t1): Z	<u> </u>		Hydraulic (Page 2 of 2 9.20	1-1201-	
Z1(Mercury H	leight Differer elapsed t	– ·		cm		Grædient = k	Page 2 of 2 9.20 k	Reset = *	
Z1(Mercury H	leight Differer elapsed t (seconds) 960	z	0.5571305	cm temp (deg C) 25	Hydraulic (Grædient = k	Page 2 of 2 9.20 k	- -	
Z1{Mercury H Date 8/23/2010 8/23/2010	leight Differer elapsed t (seconds) 960 1200	Z (pipet @ t 6.1 6	0.6571305 0.6571305	cm temp (deg C) 25 25	Hydraulic ((temp corr) 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04	- -	
21(Mercury H Date 8/23/2010 8/23/2010 8/23/2010	leight Differer elapsed t (seconda) 960 1200 1500	Z (pipet @ t 6.1 6 5.9	0.5571305 0.6571305 0.6571305 0.7571305	cm temp (deg C) 25 25 25 25	Hydraulic ((temp corr) 0.889 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.46E-08	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04	- -	
Z1{Mercury H Date 8/23/2010 6/23/2010	leight Differer elapsed t (seconda) 960 1200 1500	Z (pipet @ t 6.1 6	0.6571305 0.6571305	cm temp (deg C) 25 25 25 25	Hydraulic ((temp corr) 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04	- -	
Z1(Mercury H Date 8/23/2010 8/23/2010 8/23/2010	leight Differer elapsed t (seconda) 960 1200 1500	Z (pipet @ t 6.1 6 5.9	0.5571305 0.6571305 0.6571305 0.7571305	cm temp (deg C) 25 25 25 25	Hydraulic ((temp corr) 0.889 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.46E-08	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04	- -	
Z1(Mercury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010	leight Differer elapsed t (seconda) 960 1200 1500	Z (pipet @ t 6.1 6 5.9 5.8 8 ka =	0.5571305 0.6571305 0.6571305 0.7571305	cm temp (deg C) 25 25 25 25 25	Hydraulic ((temp corr) 0.889 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.46E-08	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04	- -	
Z1(Mercury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010	leight Differer elapsed t (seconda) 960 1200 1500	Z (pipet @ t 6.1 6 5.9 5.8 ka = ki	(cm) 0.5571305 0.6571305 0.7571305 0.7571305 0.8571305 4.62E-08	cm temp (deg C) 25 25 25 25 25	Hydraulic ((tem p corr) 0.889 0.889 0.889 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.48E-08 4.25E-08 Acceptance c	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04	Reset = * 25	<u>~</u>
Z1(Mercury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010	leight Differer elapsed t (seconda) 960 1200 1500	Z (pipet @ t 6.1 6 5.9 5.8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	(cm) 0.5571305 0.6571305 0.7571305 0.7571305 0.8571305 4.62E-08 5.01E-08	cm temp (deg C) 25 25 25 25 25 Cm/sec cm/sec	Hydraulic ((temp corr) 0.889 0.889 0.889 0.889 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.48E-08 4.25E-08 Acceptance c %	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04	Reset = * 25 1	<u>~</u>
Z1(Mercury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010	leight Differer elapsed t (seconda) 960 1200 1500	Z (pipet @ t 6.1 6 5.9 5.8 5.8 ka = ki k1 = k2 =	(cm) 0.5571305 0.6571305 0.7571305 0.8571305 0.8571305 4.62E-08 5.01E-08 4.78E-08	cm temp (deg C) 25 25 25 25 25 25 cm/sec cm/sec cm/sec	Hydraulic ((temp corr) 0.889 0.889 0.889 0.889 0.889 Vm 8.3 3.3	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.48E-08 4.25E-08 Acceptance c % %	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04	Reset = * 25	<u>~</u>
C1 (Mercury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010 8/23/2010	leight Differer elapsed t (seconda) 960 1200 1500	Z (pipet @ t 6.1 6 5.9 5.8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	(cm) 0.5571305 0.6571305 0.7571305 0.7571305 0.8571305 4.62E-08 5.01E-08	cm temp (deg C) 25 25 25 25 25 25 cm/sec cm/sec cm/sec	Hydraulic ((temp corr) 0.889 0.889 0.889 0.889 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.46E-08 4.25E-08 Acceptance c % % %	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04	Reset = * 25 1	<u>~</u>
C1(Mørcury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010 SUMMARY	leight Differer elapsed t (seconds) 960 1200 1500 1800	Z (pipet @ t 6.1 5.9 5.8 ka = ki k1 = k2 = k3 = k4 =	(cm) 0.5571305 0.6571305 0.7571305 0.7571305 0.8571305 0.8571305 4.62E-08 4.62E-08 4.78E-08 4.46E-08	cm temp (deg C) 25 25 25 25 25 25 cm/sec cm/sec cm/sec	Hydraulic ((temp corr) 0.889 0.889 0.889 0.889 0.889 0.889 <u>Vm</u> 8.3 3.3 3.6	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.48E-08 4.25E-08 Acceptance c % %	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04	Reset = * 25 1	<u>~</u>
C1(Mørcury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010 SUMMARY	leight Differer elapsed t (seconds) 960 1200 1500 1800	Z (pipet @ t 6.1 5.9 5.8 ka = ki k1 = k2 = k3 = k4 =	(cm) 0.5571305 0.6571305 0.7571305 0.8571305 0.8571305 4.62E-08 4.78E-08 4.78E-08 4.46E-08 4.25E-08	cm temp (deg C) 25 25 25 25 25 25 25 25 25 25 25 25 25	Hydraulic ((temp corr) 0.889 0.889 0.889 0.889 0.889 0.889 <u>Vm</u> 8.3 3.3 3.6	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.46E-08 4.25E-08 Acceptance c % % %	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04	Reset = * 25 1	<u>~</u>
Z1(Mercury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010 SUMMARY	leight Differer elapsed t (seconds) 960 1200 1500 1800 1800	Z (pipet @ t 6.1 5.9 5.8 ka = ki k1 = k2 = k3 = k4 =	(cm) 0.5571305 0.6571305 0.7571305 0.8571305 0.8571305 0.8571305 4.62E-08 4.78E-08 4.78E-08 4.46E-08 4.25E-08 4.25E-08 k = e =	cm temp (deg C) 25 25 25 25 25 25 25 25 25 25 25 25 25	Hydraulic ((temp corr) 0.889 0.889 0.889 0.889 0.889 0.889 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.46E-08 4.25E-08 Acceptance c % % %	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04 niteria = Vm =	Reset = * 25 1	<u>~</u>
C1(Mørcury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010 SUMMARY	leight Differer elapsed t (seconds) 960 1200 1500 1800 1800 Vold Ratio Porosity	Z (pipet @ t 6.1 6 5.9 5.8 ka = ki k1 = k2 = k3 = k4 = nductivity	(cm) 0.6571305 0.6571305 0.7571305 0.8571305 0.8571305 0.8571305 4.62E-08 4.78E-08 4.78E-08 4.46E-08 4.25E-08 k = e = n =	cm temp (deg C) 25 25 25 25 25 25 Cm/sec cm/sec cm/sec cm/sec cm/sec cm/sec cm/sec cm/sec	Hydraulic ((temp corr) 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.25E-08 Acceptance c % % % 1.31E-04	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04 miteria = Vm =	Reset = * 25 1	<u>~</u>
21(Mørcury H Date 8/23/2010 8/23/2010 8/23/2010 8/23/2010 SUMMARY	leight Differer elapsed t (seconds) 960 1200 1500 1800 1800	Z (pipet @ t 6.1 5.9 5.8 ka = ki k1 = k2 = k3 = k4 = nductivity	(cm) 0.5571305 0.6571305 0.7571305 0.8571305 0.8571305 0.8571305 4.62E-08 4.78E-08 4.78E-08 4.46E-08 4.25E-08 4.25E-08 k = e =	cm temp (deg C) 25 25 25 25 25 25 25 25 25 25 25 25 25	Hydraulic ((temp corr) 0.889 0.889 0.889 0.889 0.889 0.889 0.889 0.889	Gradient = k (cm/sec) 5.01E-08 4.78E-08 4.46E-08 4.25E-08 Acceptance c % % %	Page 2 of 2 9.20 k (ft./day) 1.42E-04 1.35E-04 1.26E-04 1.21E-04 miteria = Vm = ft/day pcf	Reset = * 25 1	<u>~</u>

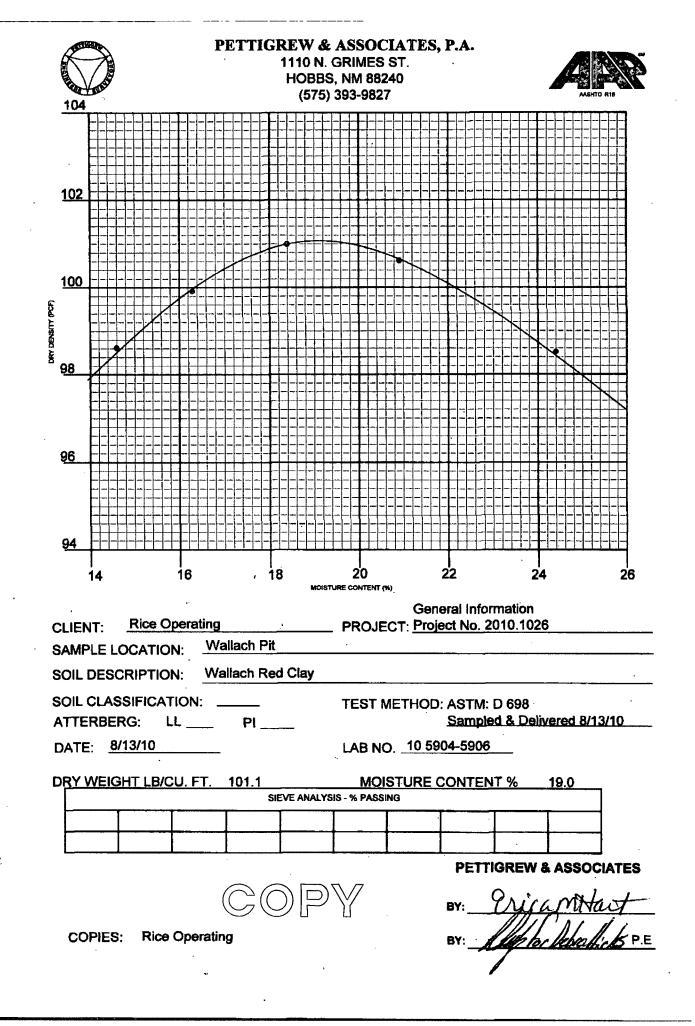
expressed or implied regarding the suitability of the site for construction or whether or not the reported data represents all conditions of the site.

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



.

THIS REPORT APPLIES ONLY TO THE STANDARDS OR PROCEDURES INDICATED AND TO THE SAMPLE(S) TESTED AND/OR OBSERVED AND ARE NOT NECESSARILY INDICATIVE OF THE QUALITIES OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS OR PROCEDURES, NOR DO THEY REPRESENT AN ONGOING QUALITY ASSURANCE PROGRAM UNLESS SO NOTED, THESE REPORTS ARE FOR THE EXCLUSIVE USE OF THE ADDRESSED CLIENT AND ARE NOT TO BE REPRODUCED WITHOUT WRITTEN PERMISSION.



2010 BTEX Study

Revised Junction Box Upgrade Plan (2003)

Cardinal	Laboratories
Laboratory:	
11/2/2010	John Harrison
Date:	Sampler:
BD	Jct. D-12
System:	Site:

	es							
J)	Total Xylen			7.08				
TE (mg/kg)	Ethyl Benzene Total Xylenes			6.30			-E (mg/kg)	
FIELD COMPOSITE	Toluene			0.999			LAB COMPOSITE	
LL	Benzene			<0.050				
PID reading	(mdd)			265.6				
Component	COILIDOLIEIL	F	2	3	4	5		
	LUCALIUL		bottom	composite at	12 ft BGS			

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.

2010 BTEX Study

Revised Junction Box Upgrade Plan (2003)

	Laboratories	
Laboratory:		
11/2/2010	John Harrison	
Date:	Sampler:	
BD	Jct. D-12	
System:	Site:	

Component	nent	PID reading		FIELD COMPOSITE	(TE (mg/kg)	(C
(bpm) (ppm)	udd)	(د ا	Benzene	Toluene	Ethyl Benzene	Ethyl Benzene Total Xylenes
2	1001				L, T	
3 130.3			000.02	0.232	cl.1	17.1
4						
				LAB COMPOSITE	TE (mg/kg)	
			0.119	1.85	1.38	5.38

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.

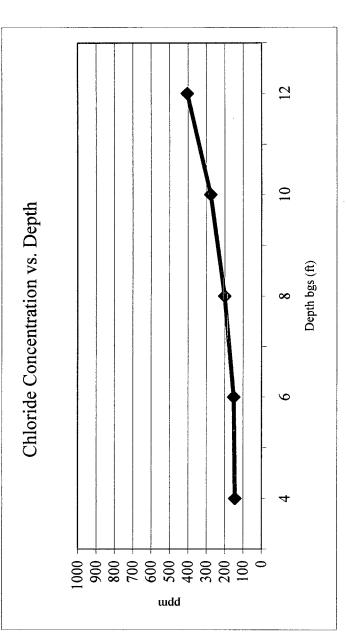
CHLORIDE CONCENTRATION CURVE

RICE Operating Company

BD Jct. D-12 unit 'D', Sec. 12, T22S, R37E

Backhoe samples at 10 ft. west of junction (source)

CI] ppm	145	151	201	277	404
Depth bgs (ft) [CI]	4	6	8	10	12



Groundwater = 59 ft.