1R - 428-70

REPORTS

DATE:

6-29-12

Texerra LLC

20055 Laredo Lane Monument, CO 80132
Tel: 719-339-6791 E-mail: lpg@texerra.com

June 29th, 2012

Mr. Edward Hansen
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

RE: **ICP Report and Request for Remediation Termination**
Rice Operating Company
Hobbs Jct. H-29 NMOCD CASE #: **1R428-70**
Township 18S, Range 38E, Section 29, Unit H

Sent via E-mail and U.S. Certified Mail: No. 7011 0110 0002 5197 9927

Mr. Hansen:

This letter and accompanying technical information are presented as a prognosis of Rice Operating Company's (ROC) Hobbs Jct. H-29 project and to request remediation termination or similar regulatory closure status.

The Hobbs Jct. H-29 site is located west of the city of Hobbs at Township 18S, Range 38E, Section 29, in Unit H (Figure 1). The original junction box and equipment were believed to have been removed during system abandonment prior to 2002 but not specifically documented. A single 60 ft deep soil bore was taken near the center of the former junction box per the Investigation and Characterization Plan (ICP) of February 18th, 2010, approved by NMOCD on February 23rd, 2010. Field and laboratory analytical results from soil samples taken at 5 foot increments are given in Figure 2 and Table 1.

Field-measured soil chloride concentrations averaged 225 mg/kg over the entire sampled depth, declining steadily from a field measured value of 350 mg/kg at 45 ft bgs to 172 mg/kg at 60 ft bgs. Soil samples were submitted for laboratory analysis, resulting in chloride concentrations of 256 mg/kg at 40 ft bgs, 240 mg/kg at 45 ft bgs, and 64 mg/kg at 60 ft bgs. It is thus apparent that the field measured values overestimated actual concentrations of residual soil chlorides. As groundwater is believed to occur at approximately 65 bgs (over 15 ft below the zone of slightly elevated soil chlorides) these residual soil chloride levels very likely do not pose a significant threat to groundwater quality.

Elevated levels of residual petroleum hydrocarbons (instrument reading = > 100 ppm) were noted by field PID analysis to a depth of 40 ft bgs. Laboratory analysis at the depth having the highest field PID reading (40 ft bgs, field PID = 322 ppm) found no benzene and low levels of toluene (0.406 mg/kg), ethylbenzene (0.888 mg/kg) and xylene (4.10 mg/kg). The sum of total, detectable BTEX was thus 5.4 mg/kg. In order to determine if any of these organic constituents

posed a likely, potential threat to groundwater quality, the MultiMed model was run based on an assumed concentration of 6.0 mg/kg BTEX throughout the entire unsaturated zone.

The MultiMed model was run for total BTEX using the parameter values given in Table 2. The model was run conservatively, ignoring miscibility and water partitioning and assuming that all soil BTEX is entrained into infiltrating water (equivalent to chloride). It was assumed that BTEX decays 2.5%/yr once entrained into groundwater, which is a conservative assumption.

The maximum projected groundwater BTEX concentration beneath the source was 0.113 mg/l at 116 years from present. Apportioning the total BTEX to its constituents based upon laboratory speciation of the 40 ft bgs sample yield the results given in Figures 3a and 3b. In all cases, the MultiMed predicted maximum concentration is substantially below the respective NMED drinking water standards.

As the residual soil chlorides and petroleum hydrocarbons from the former junction box likely do not pose a significant threat to groundwater quality, we respectfully request that NMOCD grant remediation termination or similar regulatory closure status to this project.

ROC is the service provider (agent) for the Hobbs 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.

Thank you for your consideration.

Sincerely

L. Peter Galusky, Jr. Ph.D., P.G.

Attachment: Figures, Tables and Model Parameters and Output as noted, above. Lab reports.
Copy: Rice Operating Company

Addendum – Figures and Attachments as noted previously

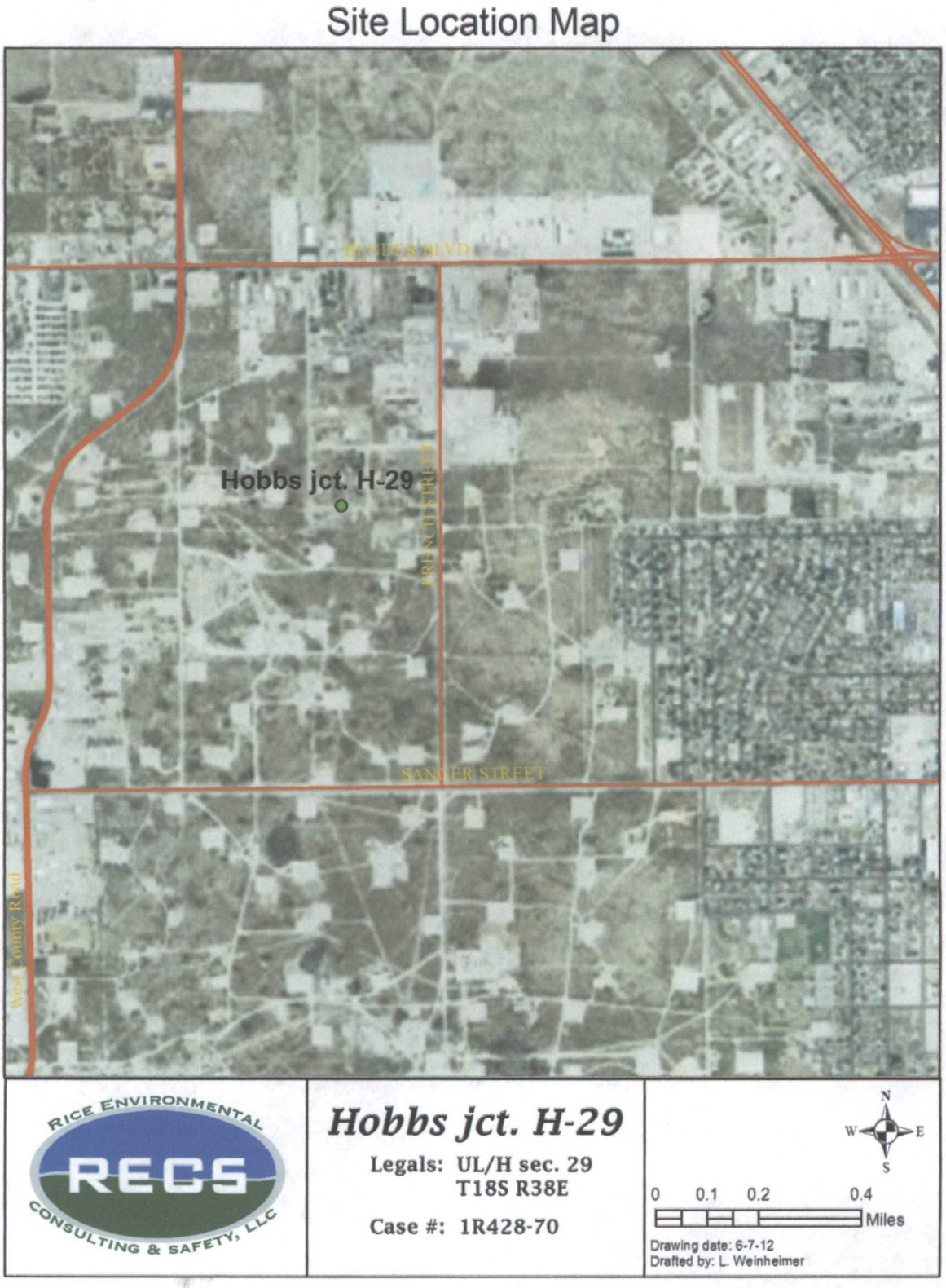


Figure 1 – Hobbs Jct. H-29 site location map.

Logger:	Jordan Woodfin	Hobbs jct. H-29 SB-1	RECS
Driller:	Harrison & Cooper, Inc.		**Project Name:** Hobbs jct. H-29 **Well ID:** SB-1
Drilling Method:	Air rotary		**Project Consultant:** R.T. Hicks
Start Date:	10/29/10		**Location:** UL/H sec. 29 T18S R38E
End Date:	10/29/10		**Lat:** 32°43'8.304"N **Long:** 103°9'54.684"W **County:** LEA **State:** NM

Comments: Located at the source of the former junction box site. All samples were from cuttings.
DRAFTED BY: L. Weinheimer
TD = 60 ft GW = 65 ft

Depth (feet)	chloride field tests	LAB	PID	Description
5 ft	172		0.6	Brown coarse sand and caliche fragments
10 ft	182		40.4	Tan fine silty sand. Hydrocarbon odor
15 ft	202		220	
20 ft	141		275	
25 ft	178		256	Yellowish tan fine silty sand. Hydrocarbon odor
30 ft	209		300	
35 ft	287		59	Sandstone and caliche
40 ft	320	Cl- 256	322	Brown silty sand. Hydrocarbon odor
	B <0.05 T 0.406	GRO 600		Yellowish brown silty sand. Hydrocarbon odor
	E 0.888 X 4.10	DRO 6170		
45 ft	350	Cl- 240	59.2	
		GRO 208		Tan silty sand. Hydrocarbon odor
		DRO 2040		
50 ft	276		27.9	
55 ft	209		7.5	
60 ft	172	Cl- 64	8.9	
		GRO <10		
		DRO 589		

Lithology / Well Construction: bentonite seal

Figure 2 – Hobbs Jct. H-29 soil boring log.

Rice Operating Company
Hobbs Jct H-29
Soil Boring Data
Soil Samples Taken: 10/29/2010
Lab Samples Analyzed: 10/29/2010 By: Cardinal Laboratories,

Depth (ft bgs)	Field Cl- (mg/kg)	Lab Cl- (mg/kg)	Field PID	Lab GRO (mg/kg)	Lab DRO (mg/kg)	Lab Benzene (mg/kg)	Lab Toluene (mg/kg)	Lab EthylBenzene (mg/kg)	Lab Xylene (mg/kg)
5	172		0.6						
10	182		40.4						
15	202		220.0						
20	141		275.0						
25	178		256.0						
30	209		300.0						
35	287		59.0						
40	320	256	322.0	600	6,170	< 0.05	0.41	0.89	4.10
45	350	240	59.2	208	2,040				
50	276		27.9						
55	209		7.5						
60	172	64	8.9	< 10	589				
average	**225**		**131**						

Table 1 – Soil boring chloride and petroleum hydrocarbon data.

MultiMed Parameter Values				
BTEX transport model				
Rice Operating Company	**Hobbs Jct H-29 location**			
June 7th, 2012				
Source				
parameter	unit	value		justification/notes
Source area	m2		25	... estimated.
Source length	m			
Source width	m			
Source infiltration rate	**m/yr**		**0.03048**	**... equiv. to 1.2 in/yr (assumes no liner or infiltration barrier).**
Initial concentration	**mg/l**		**6**	**... highest measured concentration, rounded up.**
Source decay coeff	**fraction**		**2.5%**	**... assumed to accommodate downward flux.**
Chemical				
parameter				
Dissolved decay coef	**fraction**		**2.5%**	**... assumed.**
Unsat Zone Flow				
parameter	unit	value		justification/notes
Flow layer thickness	m		10	... one-half unsat zone thickness.
Sat hydraulic conductivity	cm/hr		3.6	... assumed.
Effective porosity	fraction		0.25	... assumed.
Unsat Zone Transport				
parameter	unit	value		justification/notes
Transport layer thickness	m		10	... one-half unsat zone thickness.
Bulk density	g/cm3		1.99	... calculated based on porosity.
Saturated Zone				
parameter	unit	value		justification/notes
Aquifer thickness	m		6.10	... equals 20 ft.
Mixing zone thickness	m			... let model derive value.
Effective porosity	fraction		0.3	... assumed.
Bulk density	g/cm3		1.855	... calculated based on porosity.
Sat hydraulic conductivity	m/yr		315	... representative for Ogalalla aquifer.
Hydraulic gradient	m/m		0.003	... based on surface topography.
Wel Loc and Time				
parameter	unit	value		justification/notes
Radial distance to well	m		1.0	... provides at-source concentration.
Time step option	yrs	Find Max Conc		... used as default.
Start time	yrs			... can vary to match output.
Stop time	yrs			... can vary to match output.

Table 2 – Summary of key MultiMed parameter values used in BTEX modeling.

```
MULTIMED  V1.01   DATE OF CALCULATIONS:  7-JUN-2012  TIME: 12:48:30
Run Title:

Chemical simulated:                     Total BTEX
Simulation models included:             Saturated and unsaturated zone models
Simulation type:                        Deterministic
Infiltration rate:                      Specified By User: 3.048E-02 m/yr
Source term:                            Transient
Well Times:                             Find Maximium Concentration
Saturated zone source plane:            Gaussian
Well distance from site:                1.000E+00 m

Predicted maximum relative well concentration: 1.131E-01 at 116. years elapsed time.
DAF for this case is: 5.305E+01
```

Figure 3a – MultiMed BTEX model output.

Rice Operating Company
Hobbs Jct H-29
MultiMed BTEX Model

Fractionation of Total BTEX at 40 ft bgs

	mg/kg	% of Total BTEX
Benzene	0.000	0.0%
Toluene	0.406	7.5%
Ethylbenzene	0.888	16.5%
Xylene	4.100	76.0%
Total BTEX	5.394	100.0%

MultiMed modeled Total BTEX and Apportioned Fractionation

	MultiMed Groundwater Cmax (mg/kg)	Apportioned values	NMED Drinking Water Standard (mg/kg)	% of NMED Standard
Benzene		0.000	0.0100	0.00%
Toluene		0.009	0.7500	1.13%
Ethylbenzene		0.019	0.7500	2.48%
Xylene		0.086	0.6200	13.85%
Total BTEX	**0.113**			

Figure 3b – MultiMed BTEX model output apportioned among BTEX constituents and compared to NMED drinking water standards.

CARDINAL Laboratories

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

November 04, 2010

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: HOBBS JCT H-29

Enclosed are the results of analyses for samples received by the laboratory on 10/29/10 13:50.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene
Lab Director/Quality Manager

CARDINAL Laboratories

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:	10/29/2010	Sampling Date:	10/29/2010
Reported:	11/04/2010	Sampling Type:	Soil
Project Name:	HOBBS JCT H-29	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	HOBBS JCT H-29		

Sample ID: SB #1 @ 40 FT (H021186-01)

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	11/04/2010	ND	2.11	106	2.00		
Toluene*	**0.406**	0.050	11/04/2010	ND	1.94	97.2	2.00		
Ethylbenzene*	**0.888**	0.050	11/04/2010	ND	1.90	94.9	2.00		
Total Xylenes*	**4.10**	0.150	11/04/2010	0.157	5.68	94.6	6.00		

Surrogate: 4-Bromofluorobenzene (PID 106 % 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	**256**	16.0	10/29/2010	ND	416	104	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	**600**	50.0	10/31/2010	ND	184	92.2	200	3.65	
DRO >C10-C28	**6170**	50.0	10/31/2010	ND	154	77.1	200	4.10	

Surrogate: 1-Chlorooctane 142 % 70-130

Surrogate: 1-Chlorooctadecane 138 % 70-130

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	10/29/2010	Sampling Date:	10/29/2010
Reported:	11/04/2010	Sampling Type:	Soil
Project Name:	HOBBS JCT H-29	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	HOBBS JCT H-29		

Sample ID: SB #1 @ 45 FT (H021186-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	10/29/2010	ND	416	104	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	**208**	50.0	10/31/2010	ND	184	92.2	200	3.65	
DRO >C10-C28	**2040**	50.0	10/31/2010	ND	154	77.1	200	4.10	

Surrogate: 1-Chlorooctane	*113 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*121 %*	*70-130*

Sample ID: SB #1 @ 60 FT (H021186-03)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	10/29/2010	ND	416	104	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	10/31/2010	ND	184	92.2	200	3.65	
DRO >C10-C28	**589**	10.0	10/31/2010	ND	154	77.1	200	4.10	

Surrogate: 1-Chlorooctane	*109 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*111 %*	*70-130*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 * 501 E. MARLAND * HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL 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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Rice Operating Company	BILL TO
Project Manager: Hank Conder	P.O. #:
Address: 122 West Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: 575-393-9174 Fax #: 575-397-1471	Address:
Project #: Project Owner:	City:
Project Name: Hobbs Jct H-29	State: Zip:
Project Location: Hobbs Jct H-29	Phone #:
Sampler Name: Jordan Woodfin	Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER / WASTEWATER / SOIL / OIL / SLUDGE / OTHER	PRESERV: ACID/BASE / ICE / NONE / OTHER	SAMPLING: DATE	SAMPLING: TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions
H21166-1	SB # 1 @ 40ft		1	✓	✓	10/29/10	12:30	✓	✓	✓		
2	SB # 1 @ 45ft		1	✓	✓	10/29/10	12:35	✓	✓			
3	SB # 1 @ 60ft		1	✓	✓	10/29/10	01:00	✓	✓			

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 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 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: 10/29/10 Time: 13:30	Received By:
Relinquished By:	Date: 10/29/10 Time: 13:30	Received By: Jodi Henson
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool / Intact: Yes / No	CHECKED BY: (Initials)

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

email results

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

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

NEED SAMPLES BACK, PLEASE

#26

Hansen, Edward J., EMNRD

From: Katie Jones <kjones@riceswd.com>
Sent: Friday, August 17, 2012 4:16 PM
To: Hansen, Edward J., EMNRD
Cc: Hack Conder; L Peter Galusky Jr; Laura Pena
Subject: Hobbs Jct. H-29 (1R428-70) Multimed Files
Attachments: Hobbs H-2908.16.2012 lpg.inp; Hobbs H-2908.16.2012 lpg.out

Mr. Hansen,

Attached are the multimed input and output files for the Hobbs Jct. H-29 (1R428-70). Pete said the original files became corrupt, which caused the parameters to become undefined. He set up a new input file, resulting in a slightly higher concentration. He said the new result is also within NMED drinking water standards. Please let us know if you have any questions.

Thank you.

Katie Jones
Environmental Project Manager
RICE *Operating Company*

MULTIMED V1.01 DATE OF CALCULATIONS: 16-AUG-2012 TIME: 16:41:56

U. S. E N V I R O N M E N T A L P R O T E C T I O N A G E N C Y

E X P O S U R E A S S E S S M E N T

M U L T I M E D I A M O D E L

MULTIMED (Version 1.50, 2005)

1

Run options

--- -------

Chemical simulated is Total BTEX

Option Chosen	Saturated and unsaturated zone models
Run was	DETERMIN

Infiltration Specified By User: 3.048E-02 m/yr

Run was transient

Well Times: Find Maximium Concentration

Reject runs if Y coordinate outside plume

Reject runs if Z coordinate outside plume

Gaussian source used in saturated zone model

1

1

UNSATURATED ZONE FLOW MODEL PARAMETERS

(input parameter description and value)

NP	- Total number of nodal points	240
NMAT	- Number of different porous materials	1
KPROP	- Van Genuchten or Brooks and Corey	1
IMSHGN	- Spatial discretization option	1

NVFLAYR - Number of layers in flow model 1

OPTIONS CHOSEN
------- ------
Van Genuchten functional coefficients
User defined coordinate system
1

Layer information

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
1	10.00	1

DATA FOR MATERIAL 1
---- --- --------
VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	10.0	0.000	0.000	0.000

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent,EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used		1
NTSTPS	- Number of time values concentration calc		40
DUMMY	- Not presently used		1
ISOL	- Type of scheme used in unsaturated zone		2
N	- Stehfest terms or number of increments		18
NTEL	- Points in Lagrangian interpolation		3
NGPTS	- Number of Gauss points		104
NIT	- Convolution integral segments		2
IBOUND	- Type of boundary condition		3
ITSGEN	- Time values generated or input		1
TMAX	- Max simulation time	--	0.0

WTFUN - Weighting factor -- 1.2

OPTIONS CHOSEN
------- ------
Convolution integral approach
Exponentially decaying continuous source
Computer generated times for computing concentrations
1

DATA FOR LAYER 1
---- --- -----
VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	10.0	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

1

CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	CONSTANT	0.250E-01	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm2/s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.
Mole fraction of solute	--	CONSTANT	-999.	-999.	-999.	-999.
Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.	-999.	-999.

	Henry`s law constant	atm-m^3/M	CONSTANT	-999.	-999.
-999.	-999.				
	Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000
0.000	1.00				
	Not currently used		CONSTANT	0.000	0.000
0.000	0.000				
	Not currently used		CONSTANT	0.000	0.000
0.000	0.000				

1

SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
			MEAN	STD DEV
LIMITS				
MIN MAX				
Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.
-999. -999.				
Area of waste disposal unit	m^2	CONSTANT	25.0	-999.
-999. -999.				
Duration of pulse	yr	DERIVED	10.0	-999.
-999. -999.				
Spread of contaminant source	m	DERIVED	-999.	-999.
-999. -999.				
Recharge rate	m/yr	CONSTANT	0.305E-01	-999.
-999. -999.				
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000
0.000 0.000				
Initial concentration at landfill	mg/l	CONSTANT	6.00	-999.
-999. -999.				
Length scale of facility	m	DERIVED	20.1	-999.
-999. -999.				
Width scale of facility	m	DERIVED	24.4	-999.
-999. -999.				

	Near field dilution		DERIVED	1.00	0.000
0.000	1.00				
1					

AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	3.00	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.

	Temperature of aquifer	C	CONSTANT	20.0	-999.
-999.	-999.				
	pH	--	CONSTANT	7.00	-999.
-999.	-999.				
	Organic carbon content (fraction)		CONSTANT	0.000	-999.
-999.	-999.				
	Well distance from site	m	CONSTANT	1.00	-999.
-999.	-999.				
	Angle off center	degree	CONSTANT	0.000	-999.
-999.	-999.				
	Well vertical distance	m	CONSTANT	0.000	-999.
-999.	-999.				

MAXIMUM WELL CONCENTRATION IS 0.2620 AT 0.890E+02 YEARS

Hansen, Edward J., EMNRD

From: Laura Pena <lpena@riceswd.com>
Sent: Tuesday, August 21, 2012 1:25 PM
To: Hansen, Edward J., EMNRD
Cc: Hack Conder; Katie Jones
Subject: ROC - Hobbs Jct. H-29 (1R428-70) Photo Documentation
Attachments: Hobbs Jct. H-29 (1R428-70) Photo Documentation.pdf

Mr. Hansen,

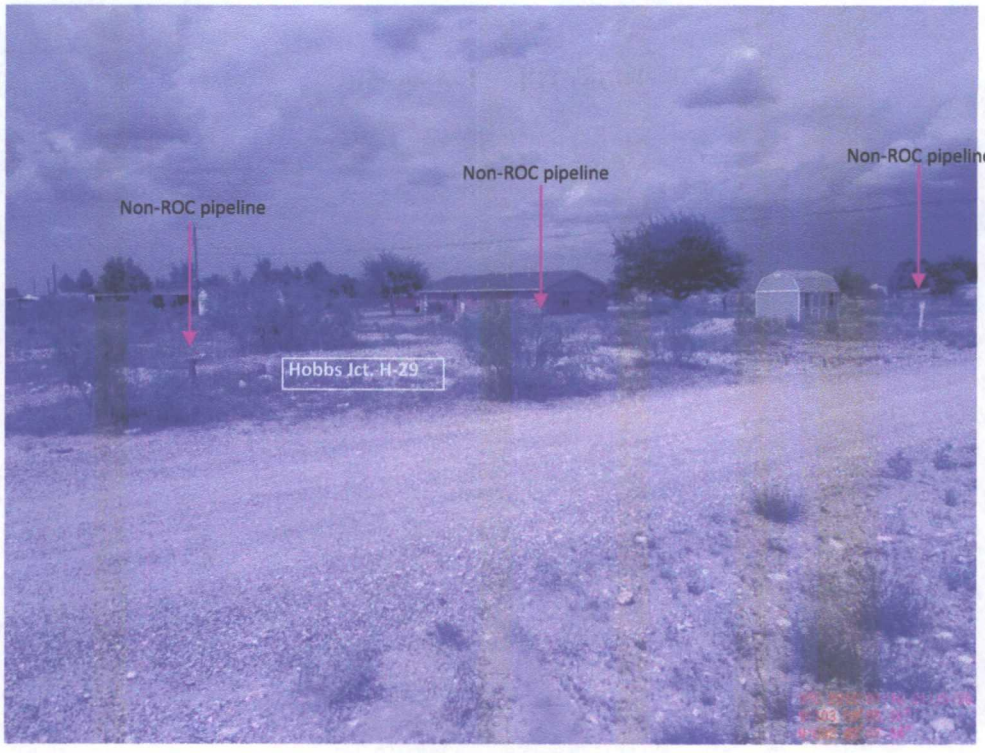
Attached is the photo documentation for the Hobbs Jct. H-29 (1R428-70) site as requested.

Let us know if you have any questions or require any additional information.

Thank you,

Laura Peña
Environmental Project Scientist
RICE Operating Company

Hobbs Jct. H-29 (1R428-70)
UL H, Section 29, T18S, R38E



Facing North 7/16/2012

Facing East 7/16/2012