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REPORTS

DATE:

5-23-08

RICE Operating Company

122 West Taylor • Hobbs, NM 88240 Phone: (505) 393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL RETURN RECEIPT NO. 7007 2560 0003 0323 6871

May 23, 2008

Mr. Wayne Price New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe, New Mexico 87505

RE: NOTIFICATION OF GROUNDWATER IMPACT Hobbs ict. E-4 vent, #1R428-71

Unit E, Sec. 4, T19S, R38E

Mr. Price:

As part of the OCD-approved (7/18/2007) Investigation and Characterization Plan (ICP), R.T. Hicks Consultants (Hicks) supervised a backhoe investigation (August-September 2007) and an initial soil boring investigation (2/18/2008) at the subject site and found:

- The initial ground water sampling event detected 2.9 mg/L benzene and background concentrations of chloride (78 mg/L).
- Samples from the vadose zone beneath the former junction box showed evidence of chloride and hydrocarbons to a depth of 15 feet, albeit relatively low concentrations.
- Samples from the vadose zone from MW-1 (about 40-feet from the former junction box) detected hydrocarbons from 15 feet to ground water, but relatively low concentrations of chloride.
- Samples from the vadose zone at SB-1 mirrored the results at MW-1
- Produced water possibly released from the ROC junction box would have contained mostly brine with only small amounts of hydrocarbons.

The monitoring well was developed and sampled pursuant to OCD guidelines by Arc Environmental (Arc) of Lovington. Laboratory analyses of two sampling events confirm the Water Quality Control Commission numerical standards for Benzene, Toluene, Ethyl Benzene,

and total Xylenes (BTEX) are exceeded at the monitoring well. Arc will continue to sample the well on a quarterly basis.

Please do not accept this submission as a formal disclosure of potential or confirmed ground water impact due to the activities of Rice Operating Company (ROC) at this site. While ground water impairment does exist at this location and ROC believes that transmission of this finding to OCD is appropriate, we do not believe that the evidence collected thus far suggests that the ROC pipeline is the source of hydrocarbons in ground water.

After review of the data and additional investigation, Hicks will submit a Corrective Action Plan to OCD. In the submission, we will provide an opinion of the source of hydrocarbons in ground water as well as supporting evidence.

ROC is the service provider (agent) for the Hobbs Salt Water Disposal System and has no ownership of any portion of the pipelines, wells, or facilities. The Hobbs System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Environmental remediation projects of this magnitude require System Partner AFE approval and work begins as funds are received. The Hobbs System has been abandoned.

Should you have any questions or concerns regarding this site, please do not hesitate to contact ROC.

RICE OPERATING COMPANY

Knistin Samo Pope

Kristin Farris Pope Project Scientist

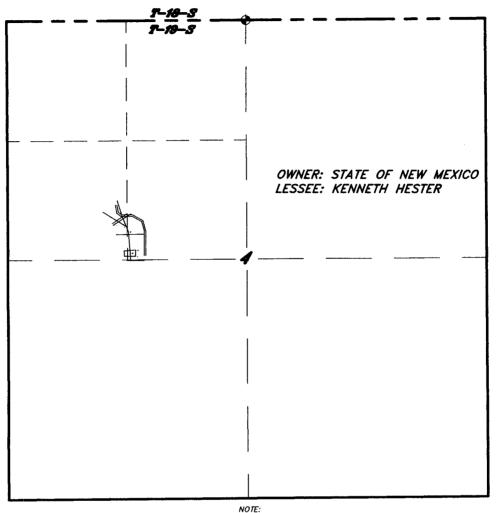
enclosures: 2 water analyses, soil boring log, well log, survey map, satellite map

cc: SC, MB, Hicks, file,

Mr. Chris Williams NMOCD, District 1 Office 1625 N. French Drive Hobbs, NM 88240



SECTION 4, TOWNSHIP 19 SOUTH, RANGE 38 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

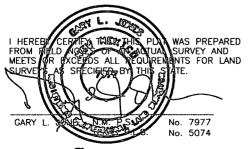




NOTE: ELEVATIONS ARE ON BLACK MARK ON NORTH SIDE OF PVC CASING.

NEW MEXICO STATE PLANE COORDINATES (NAD83)

WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEV. PVC	ELEV. GRND	ELEV. CON.
MW #1	616889.790	902998,970	32*41*25.334"	103*09'28.049"	3615.50'	3611.90'	3612.05'



BASIN SURVEYS P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 19349 Drawn By: **J. M. SMALL**Date: 03-06-2008 Disk: JMS 19349MW

1000 0 1000 2000 FEET

SCALE: 1" = 1000'

RICE OPERATING COMPANY

REF: HOBBS JCT E-4

MONITOR WELL LOCATED IN

SECTION 4, TOWNSHIP 19 SOUTH, RANGE 38 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

Survey Date: 03-05-2008 | Sheet 1 of 2 Sheets

SECTION 4, TOWNSHIP 19 SOUTH, RANGE 38 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO. OWNER: STATE OF NEW MEXICO LESSEE: KENNETH HESTER NOTE: ELEVATIONS ARE ON BLACK MARK ON NORTH SIDE OF PVC CASING. NEW MEXICO STATE PLANE COORDINATES (NAD83) WELL NORTHING EASTING LATITUDE LONGITUDE ELEV. PVC ELEV. GRND ELEV. CON. 616889.790 902998.970 32'41'25.334" 10309'28.049" 3615.50' 3611.90' 100 100 200 FEET HEHERE SCALE: 1" = 100' WAS PREPARED AL SURVEY AND EMENTS FOR LAND RICE OPERATING COMPANY REF: HOBBS JCT E-4 MONITOR WELL LOCATED IN No. 7977 SECTION 4, TOWNSHIP 19 SOUTH, RANGE 38 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

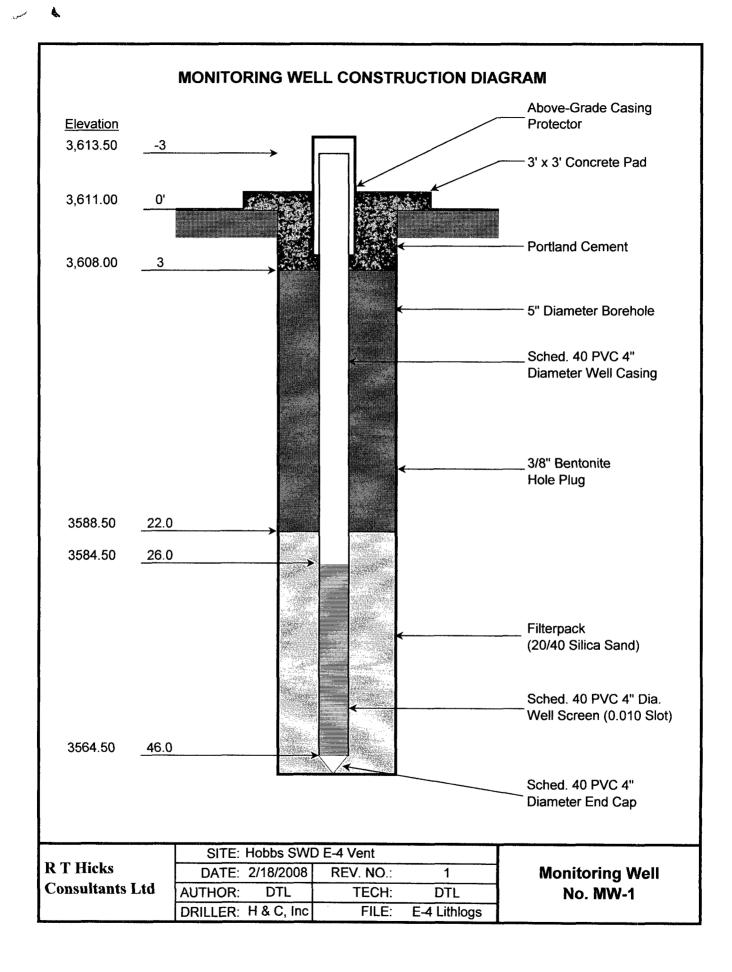
BASIN SURVEYS P.O. BOX 1786-HOBBS, NEW MEXICO

LITHOLOGIC LOG (SOIL BORING) R T Hicks TOTAL DEPTH: 37 Ft MONITOR WELL NO.: SB-1 SITE ID: Hobbs SWD E-4 Vent
SURFACE ELEVATION: 3,612 (USGS Map) CLIENT: Rice Operating Company
COUNTY: Lea County **Consultants Ltd** CONTRACTOR: Harrison & Cooper, Inc. STATE: New Mexico DRILLING METHOD: Air-Rotary LOCATION: T-19-S, R-38-E, Sec. 4 (E) P O Box 7624 FIELD REP.: Dale Littlejohn
FILE NAME: \text{\text{Hobbs SWD\E-4 Lithlogs}} INSTALLATION DATE: 2/18/08
WELL PLACEMENT: 6 ft north of frmr jct. box Midland, TX 79708 (432) 528-3878 COMMENTS: Lat. 32° 41' 26.0" North, Long. 103° 9' 27.8" West (Hand-Held GPS) SAMPLE DATA (PPM) Lithology DEPTH LITHOLOGIC DESCRIPTION: LITHOLOGY, COLOR, GRAIN SIZE SORTING, ROUNDING, CONSOL., DIST. DEATURES DEPTH % REC PID CI (Fld) CALICHE Gray to white, soft, with some silt. ___ _ 5 ___ 10 CALICHE Gray (discolored) with some silt (5%) and sand (5%). _ spoon 10-12 10% 761 169 15 BENTONITE 15-17 20% 1,317 155 spoon 20 spoon 20-22 10% 1,540 260 QUARTZITE Reddish brown, fine crystilline, hard drilling. SAND Dark brown, medium grain, well-sorted, sub-angular, strong hydrocarbon odor but no discoloration. Lab Data: Chloride 25-27 90% 1,611 298 BTEX Benz Naphthalene spoon (mg/kg) 43.1 98.2 3.82 2.14 30 30-32 90% 621 239 QUARTZITE Reddish brown, fine crystilline, hard drilling. spoon SAND Brown, medium grain, well-sorted, sub-angular, strong hydrocarbon odor but no discoloration. 35 Lab Data: Chloride BTEX spoon 35-37 70% 666 195 Benz Naphthalene (mg/kg) ND 23 0.61 1.04

Saturated Formation at 36 to 37 feet.

TD = 37 Feet

LITHOLOGIC LOG (MONITORING WELL) R T Hicks MONITOR WELL NO .: MW-1 TOTAL DEPTH: 50 Ft SITE ID: Hobbs SWD E-4 Vent **CLIENT: Rice Operating Company Consultants Ltd** SURFACE ELEVATION: 3,611 (USGS MAP) COUNTY: Lea County CONTRACTOR: Harrison & Cooper, Inc. STATE: New Mexico DRILLING METHOD: Air-Rotary LOCATION: T-19-S, R-38-E, Sec. 4 (E) P O Box 7624 INSTALLATION DATE: 2/18/08 WELL PLACEMENT: 35 ft south of frmr jct. box FIELD REP.: Dale Littlejohn FILE NAME: Hobbs SWD\E-4 Lithlogs Midland, TX 79708 (432) 528-3878 COMMENTS: Lat. 32° 41' 25.4" North, Long. 103° 9' 28.0" West (Hand-Held GPS) Lithology SAMPLE DATA (PPM) DEPTH LITHOLOGIC DESCRIPTION: LITHOLOGY, COLOR, GRAIN SIZE TYPE DEPTH % REC PID CI (Fld) SORTING, ROUNDING, CONSOL., DIST. FEATURES SILT brown, thin layer over caliche. CALICHE AND SILT Gray to white, soft, becoming siltier below 3 5 5-7 390 325 20% spoon BENTONITE HOLE PLUG 4" PVC BLANK CASING 10 280 10-11 10% 425 spoon 15 spoon 15-17 50% 1,807 313 Lab Data: Chloride **BTEX** Benz Naphthalene (mg/kg) 173 32.6 0.07 1.61 20 20-22 80% 1,311 322 QUARTZITE Reddish gray, fine crystilline, hard. × spoon SAND Brown, fine to medium grain, well-sorted, sub-angular, becoming more rounded with depth. 25 spoon 25-27 100% 1,673 280 30 Lab Data: 30-32 100% 1,751 209 Chloride **BTEX** Naphthalene spoon Benz 20/40 SAND FILTERPACK SLOTTED SCREEN (0.010") (mg/kg) ND 18.1 0.007 1.14 35 40 SANDSTONE Grayish brown, well-sorted, medium grain, rounded, hard drilling. 45 FILL 50 TD = 50 Feet





ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: KRISTIN FARRIS-POPE 122 W. TAYLOR STREET HOBBS, NM 88240

FAX TO: (575) 397-1471

Receiving Date: 03/10/08 Reporting Date: 03/14/08 Project Number: NOT GIVEN

Project Name: HOBBS JUNCTION E-4

Project Location: T19S-R38E-SEC4 E~LEA COUNTY, NM

Sampling Date: 03/07/08 Sample Type: WATER

Sample Condition: COOL & INTACT

Sample Received By: ML Analyzed By: HM/KS

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity (mgCaCO ₃ /L)
ANALYSIS DATE:	03/13/08	03/13/08	03/13/08	03/13/08	03/11/08	03/11/08
H14415-1 MONITOR WELL #1	104	94.5	45.2	2.16	1,150	520
Quality Control	NR	50.6	50.8	3.12	1,424	NR
True Value QC	NR	50.0	50.0	3.00	1,413	NR
% Recovery	NR	101	102	104	101	NR
Relative Percent Difference	NR	2.8	< 0.1	2.6	1.1	NR
METHODS:		3500-Ca-D		8049	120.1	310.1
	CI ⁻	SO₄	CO ₃	HCO₃	pН	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:	03/13/08	03/13/08	03/11/08	03/11/08	03/11/08	03/12/08
H14415-1 MONITOR WELL #1	76	23.5	0	634	7.23	710
Quality Control	500	25.6	NR	988	7.05	NR
True Value QC	500	25.0	NR	1000	7.00	NR
% Recovery	100	102	NR	98.8	101	NR
Relative Percent Difference	2.0	4.7	NR	1.2	< 0.1	NR
METHODS:	SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

Busta Supudo

03/14/08 Date



ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: KRISTIN FARRIS-POPE 122 W. TAYLOR STREET HOBBS, NM 88240

FAX TO: (575) 397-1471

Receiving Date: 03/10/08 Sampling Date: 03/07/08
Reporting Date: 03/11/08 Sample Type: WATER

Project Number: NOT GIVEN Sample Condition: COOL & INTACT

Project Name: HOBBS JUNCTION E-4 Sample Received By: ML

Project Location: T19S-R38E-SEC4 E ~ LEA COUNTY - NM Analyzed By: AB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DA	TE	03/10/08	03/10/08	03/10/08	03/10/08
H14415-1	MONITOR WELL #1	2.90	2.75	0.820	2.47
Quality Control		0.100	0.093	0.087	0.276
True Value QC		0.100	0.100	0.100	0.300
% Recovery		100	93.2	86.7	91.9
Relative Perce	nt Difference	0.5	1.4	1.5	1.1

METHOD: EPA SW-846 8021B

nist /

Sampler Relinquished by roject Location: ONLY 122 W Taylor Street ~ Hobbs, New Mexico 88240 Kristin Farris-Pope, Project Scientist oject Manager RICE Operating Company (575) 393-9174 T19S-R38E-Sec4 E ~ Lea County - New Mexico 101 East Marland - Hobbs, New LAB# Mexico 88240 Tel (575) 393-2326 Fax (575) 393-2476 (Street, City, Zip) UPS Monitor Well #1 Bus 200 Date: Date: 3000 FIELD CODE Hobbs Junction E-4 Project Name: Other: me Cardinal Laboratories, J 2 É Received by (575) 397-1471 (G)rab or (C)omp G Yes RICE Operating Company 122 W Taylor Street ~ Hobbs, New Mexico 88240 BILL TO Company (575) 393-9174 # CONTAINERS WATER SOIL MATRIX AIR SLUDGE (Initials) CHECKED BY: HCL (2 40ml VOA) PRESERVATIVE HNO₃ Date: 3-10-<u>rozanne@valornet.com</u> Date: 31-9310 (575)631-9310 (575)631 METHOD NaHSO₄ (Street, City, Zip) H₂SO₄ 88 ICE (1-1Liter HDPE) Time: (575)397-1471 NONE 15.0 SAMPLING 3-7 **DATE (2008)** 17:10 TIME Fax Results Phone Results MTBE 8021B/602 REMARKS: Email Results to: BTEX 8021B/602 TPH 418.1/TX1005 / TX1005 Extended (C35) CHAIN-OF-CUSTODY AND ANALYSIS REQUEST Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7 LAB Order ID # TCLP Metals Ag As Ba Cd Cr Pb Se Hg Yes TCLP Volatiles (Circle or Specify Method No. és **ANALYSIS REQUEST** kpope@riceswd.com TCLP Semi Volatiles rozanne@valornet.com weinheimer@riceswd.com TCLP Pesticides 8 Š **RCI** GC/MS Vol. 8260B/624 Additional Fax Number GC/MS Semi. Vol. 8270C/625 PCB's 8082/608 Pesticides 8081A/608 BOD, TSS, pH Moisture Content Cations (Ca, Mg, Na, K) × × Anions (Cl, SO4, CO3, HCO3) × **Total Dissolved Solids** Chlorides Turn Around Time ~ 24 Hours

Page 1 of 1



ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: KRISTIN FARRIS-POPE 122 W. TAYLOR STREET HOBBS, NM 88240 FAX TO: (575) 397-1471

Receiving Date: 05/05/08

Reporting Date: 05/08/08

Project Number: NOT GIVEN

Project Name: HOBBS JUNCTION E-4

Project Location: T19S-R38E-SEC4 E ~ LEA COUNTY, NM

Sampling Date: 05/02/08

Sample Type: WATER

Sample Condition: COOL & INTACT

Sample Received By: NF

Analyzed By: BC

				ETHYL	TOTAL
		BENZENE	TOLUENE	BENZENE	XYLENES
LAB NUMBER	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)

ANALYSIS DATE		05/08/08	05/08/08	05/08/08	05/08/08
H14750-1	MONITOR WELL #1	2.19	2.50	0.497	1.87
Quality Control		0.089	0.084	0.086	0.280
True Value QC		0.100	0.100	0.100	0.300
% Recovery		88.9	83.9	86.3	93.3
Relative Percent	Difference	3.7	6.2	4.9	4.8

METHOD: EPA SW-846 8260

Chemist

Date



ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: KRISTIN FARRIS-POPE 122 W. TAYLOR STREET HOBBS, NM 88240 FAX TO: (575) 397-1471

Receiving Date: 05/05/08 Reporting Date: 05/09/08 Project Number: NOT GIVEN

Project Name: HOBBS JUNCTION E-4

Project Location: T19S-R38E-SEC4 E~LEA COUNTY, NM

Sampling Date: 05/02/08 Sample Type: WATER

Sample Condition: COOL & INTACT

Sample Received By: NF Analyzed By: HM/KS

LAB NUMBER SAMPLE ID ANALYSIS DATE:	Na (mg/L) 05/09/08	Ca (mg/L) 05/09/08	Mg (mg/L) 05/09/08	K (mg/L) 05/07/08	Conductivity (u S/cm)	T-Alkalinity (mgCaCO ₃ /L) 05/07/08
H14750-1 MONITOR WELL #1	113	96	44	1.78	1,140	552
Quality Control	NR	52.9	48.6	2.57	1,410	NR
True Value QC	NR	50.0	50.0	3.00	1,413	NR
% Recovery	NR	106	97.2	85.7	99.8	NR
Relative Percent Difference	NR	3.1	7.7	4.0	0.1	NR
METHODS:	SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1
	CI	SO₄	CO ₃	HCO ₃	рН	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:	05/07/08	05/08/08	05/07/08	05/07/08	05/07/08	05/06/08
H14750-1 MONITOR WELL #1	80	< 10	0	673	7.28	740
		,				
Quality Control	500	44.9	NR	1000	7.05	NR
True Value QC	500	40.0	NR	1000	7.00	NR
% Recovery	100	112	NR	100	101	NR
Relative Percent Difference	4.1	3.1	NR	2.4	< 0.1	NR
METHODS:	SM4500-CI-B	375.4	310.1	310.1	150.1	160.1

Har I. M. Nemo

05-12-0P

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 client for 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 thirty (30) days after completion of the applicable service. In the word shall claim in the liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its substitutiers, 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. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

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