

1R - 426-09

Annual GW Mon. REPORTS

DATE:

2008



TETRA TECH

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March 16, 2009

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

Re: 2008 Annual Groundwater Summary Report & Project Status Report, Rice Operating Company, Blinebry Drinkard (BD) SWD System H-19 Vent, Unit H, Section 19, T-21-S, R-37-E, Lea County, New Mexico, NMOCD CASE #1R0426-09

Mr. Jones:

Tetra Tech Inc. (Tetra Tech) takes this opportunity to submit the 2008 Annual Groundwater Summary Report for the Rice Operating Company (ROC), Blinebry Drinkard (BD) SWD System H-19 Vent. ROC is the service provider (agent) for the BD Salt Water Disposal System and has no ownership of any portion of the pipeline, well or facility. The BD SWD system is owned by a consortium of oil producers, system partners, who provide all operating capital on a percentage ownership/usage basis.

Background

As part of the ROC Junction Box Upgrade Workplan, starting on July 14, 2003, the H-19 was moved 25' to the northwest. The original junction box was investigated vertically and horizontally with a trench utilizing a backhoe. The site was excavated to a depth of 12 feet below ground surface (bgs) whereby the chlorides were 9,570 mg/kg and TPH was 1,550 mg/kg. No water wells were located within Section 19 which contains the site. However, according to the USGS Well Report, one water well is located in adjacent Section 18 with a depth to groundwater of 98 feet bgs.

Upon completion of the excavation, the trench was backfilled and contoured to the surrounding surface. On September 16, 2003, ROC submitted a Junction Box Disclosure Report to the NMOCD. A copy of the Junction Box Disclosure Report is included in Appendix A.

Tetra Tech
1910 North Big Spring, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



On August 3, 2007, ROC submitted the ICP to Mr. Wayne Price of the NMOCD-Santa Fe office for review. Mr. Price granted approval of the ICP in a letter dated August 13, 2007.

On April 4, 2008, Highlander personnel were onsite to oversee the installation of one soil boring (SB-1) within the former junction box location. Soil samples were collected every 5 feet beginning at a depth of 5 feet bgs within the excavated area. Samples were collected utilizing a split spoon sampler and were field screened for TPH utilizing a photoionization detector (PID) and for chlorides with a field sampling kit. Field results indicate the soils were impacted with chlorides to a depth of 90 feet bgs with no PID readings to indicate TPH within the soil. The soil boring location is shown on Figure 3.

In order to determine if groundwater was impacted from the former junction box, one monitor well was installed (MW-1) to the southeast of the excavated junction box to a depth of 133 feet bgs. Upon completion, the monitor well was developed and samples submitted to Cardinal Labs of Hobbs, New Mexico for analysis of chlorides by EPA method 300.0 and BTEX by EPA method 8021B. The results indicated the site has been impacted with chlorides ranging from 516 to 560 mg/L. No BTEX was detected in the groundwater.

On June 3, 2008, ROC submitted a Notification of Groundwater Impact to Mr. Wayne Price of the NMOCD-Santa Fe office.

Monitor Well Sampling

The site monitor well was sampled on April 23, July 8, and October 9, 2008. Prior to sampling, the well was gauged for static water levels. The monitor well cap was opened and the water level measurement was taken from the top of the casing. The measurement was taken to the nearest 0.01 feet.

The well was then purged using a portable submersible pump. Approximately three casing volumes of water were purged from the well prior to sampling. The pump and associated tubing was decontaminated with a laboratory grade detergent and rinsed with deionized water. Cumulative water level measurements and purge volumes for the monitor well are included in the Tables Section of this report.

The well was also inspected for the presence of phase-separated hydrocarbons (PSH). A groundwater sample was collected as soon as possible after the groundwater returned to its static level. The groundwater sample was collected using clean disposable polyethylene bailers and disposable line. The sample was transferred into labeled and preserved containers provided by the laboratory. The sample was delivered under proper chain-of-custody control to Cardinal Labs of Hobbs, New Mexico. The groundwater sample was analyzed for major anions by methods 310.1, 9253 and 375.4, cations by method 6010B, Total Dissolved Solids (TDS) by method 160.1 and Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) by method EPA 8021B. Copies of the laboratory reports are enclosed in Appendix A.

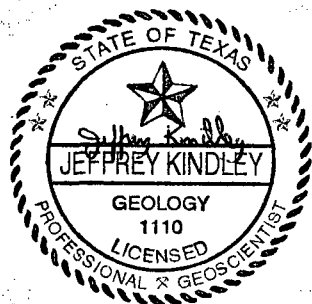


Monitor Well Sample Results

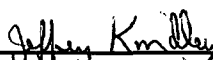
The source area monitor well MW-1, had chloride concentrations ranging from 468 mg/L in October to 560 mg/L in July of 2008. The chloride and TDS concentrations in the monitor well was relatively stable throughout the year. However, the chloride concentrations remained above the 250 mg/L New Mexico Water Quality Control Commission (WQCC) standard and the 1,000 mg/L for TDS in all sampling events. No traces of BTEX were detected in monitor well MW-1 throughout 2008. Cumulative analytical data is summarized in the Table Section of this report.

Conclusions

1. In 2008, there were no BTEX constituents detected at or above reporting limits for monitor well MW-1.
2. Chloride and total dissolved solid (TDS) concentrations from monitor well MW-1 currently exceeds the New Mexico Water Quality Control Commission (WQCC) standards of 250 mg/L for chloride and 1,000 mg/L for TDS in all sampling events.



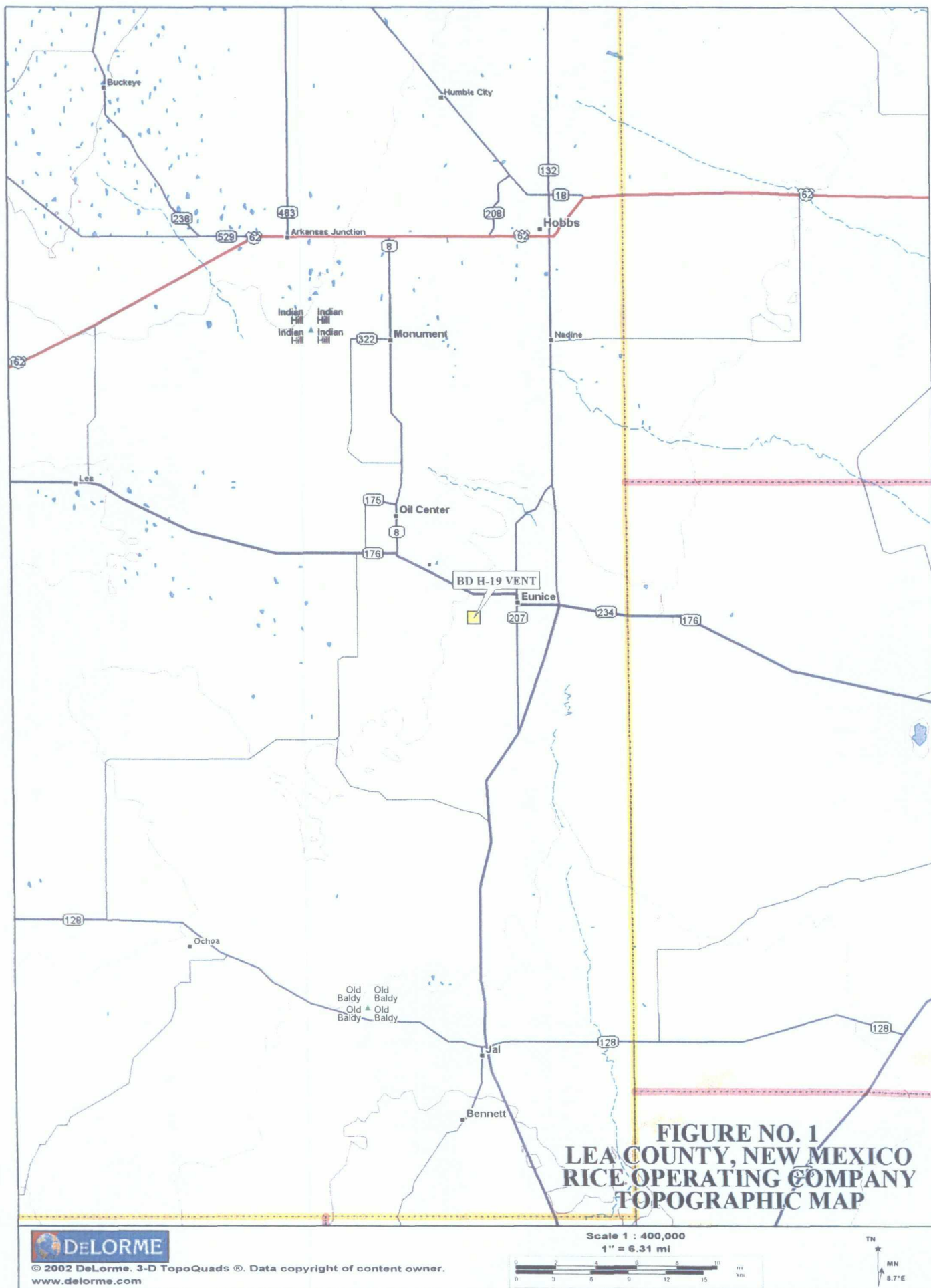
Respectfully Submitted,
Tetra Tech, Inc.



Jeffrey Kindley, P.G.
Senior Environmental Geologist

cc: Hack Conder – ROC, Edward Hansen – NMOCD
Enclosures: Figures, Tables, Laboratory Analysis

FIGURES



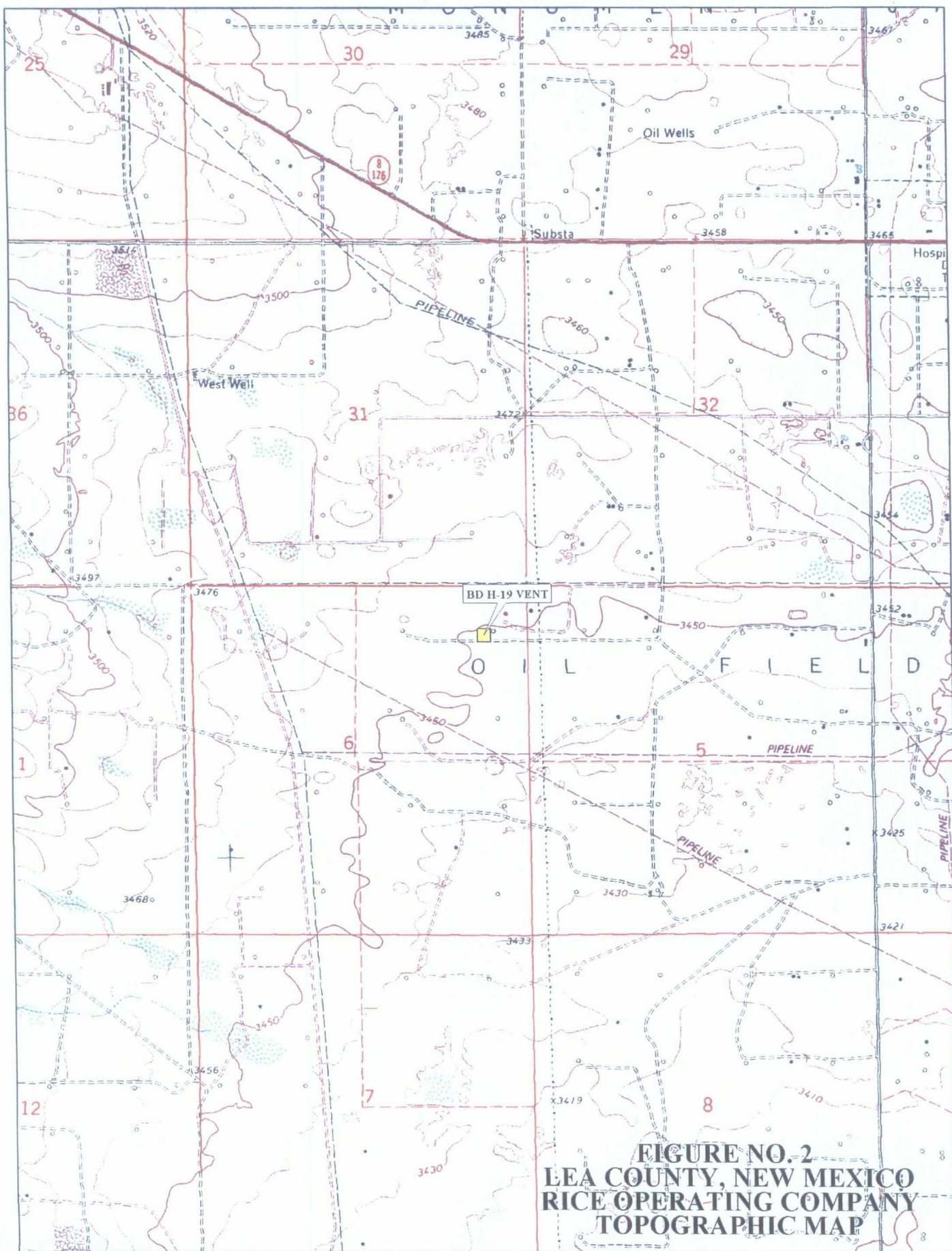
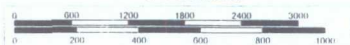


FIGURE NO. 2
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP



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www.delorme.com

Scale 1 : 24,000
 1" = 2000 ft



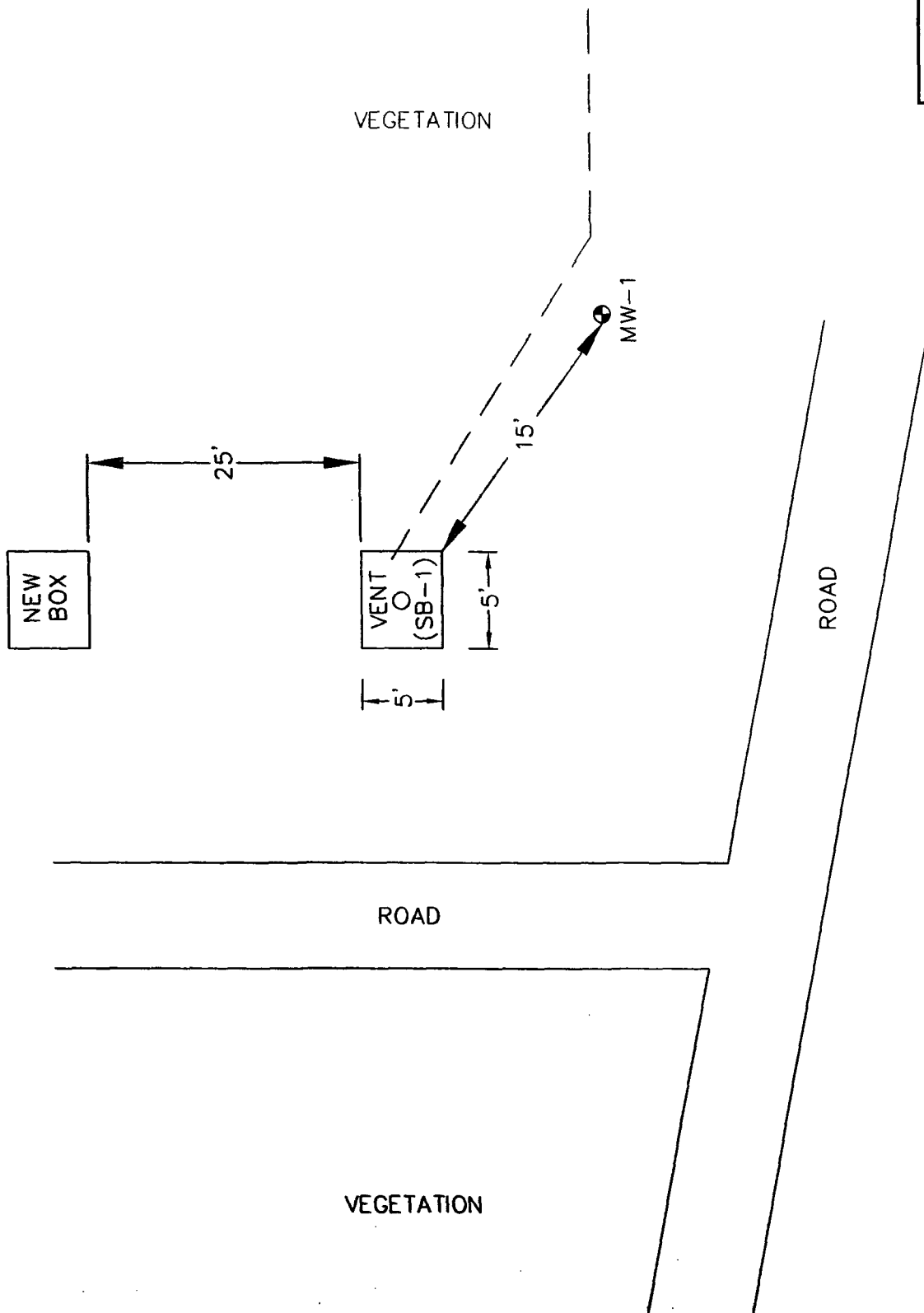


FIGURE NO. 3

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY
BD H-19 VENT

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

DATE:	8/6/07
DRAWN BY:	RC
FILE:	C:\NCE\3000
	BD H-19 VENT

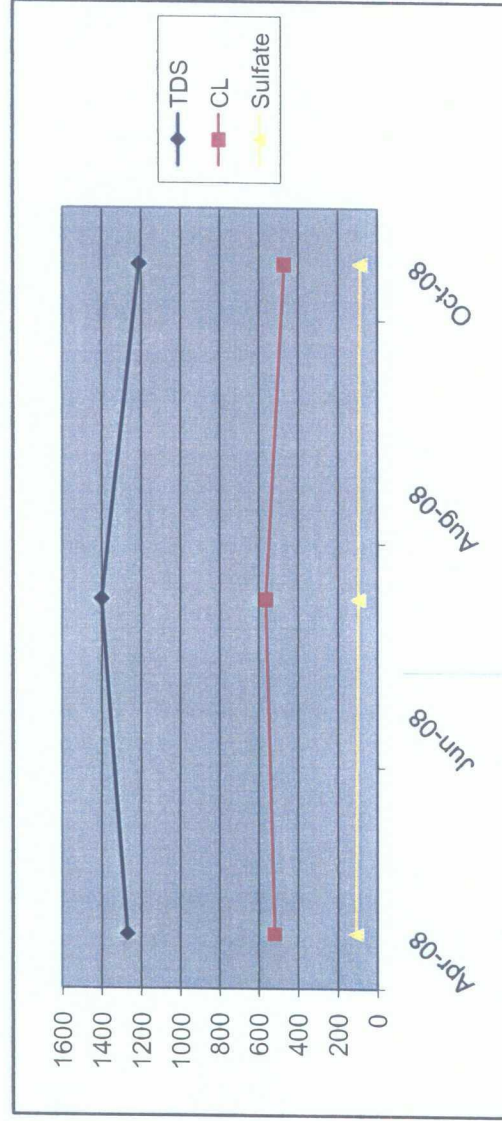
NOT TO SCALE

TABLES

Rice Operating Company
H-19 Vent

Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	120.78	137.25	2.60	10	04/23/08	516	1270	<0.001	<0.001	<0.001	<0.003	106	Clear no odor
1	120.96	137.25	2.60	10	07/08/08	560	1400	<0.001	<0.001	<0.001	<0.006	95.5	Clear no odor
1	120.92	137.25	2.60	10	10/09/08	468	1210	<0.001	<0.001	<0.001	<0.003	86	Clear no odor
1													
1													
1													
1													



APPENDIX A
LABORATORY ANALYTICAL



ARDINAL LABORATORIES

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

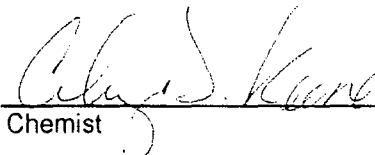
ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: KRISTIN FARRIS-POPE
122 W. TAYLOR ST.
HOBBS, NM 88240
FAX TO: (575) 397-1471

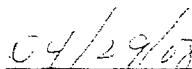
Receiving Date: 04/24/08
Reporting Date: 04/28/08
Project Owner: NOT GIVEN
Project Name: BD H-19 VENT
Project Location: T21S R37E SEC19 H ~ LEA CO., NM

Sampling Date: 04/23/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: AB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		04/25/08	04/25/08	04/25/08	04/25/08
H14710-1	MONITOR WELL #1	<0.001	<0.001	<0.001	<0.003
Quality Control		0.097	0.097	0.095	0.296
True Value QC		0.100	0.100	0.100	0.300
% Recovery		97.0	96.8	95.4	98.6
Relative Percent Difference		0.5	1.4	0.8	0.7

METHOD: EPA SW-846 8021B


Chemist


Date

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

Receiving Date: 04/24/08
Reporting Date: 04/28/08
Project Number: NOT GIVEN
Project Name: BD H-19 VENT
Project Location: T21S R37E SEC19 H-LEA COUNTY, NM

Sampling Date: 04/23/08
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 (μ S/cm)	T-Alkalinity (mgCaCO ₃ /L)
ANALYSIS DATE:	04/28/08	04/28/08	04/28/08	04/28/08	04/25/08	04/25/08
H14710-1 MONITOR WELL #1	356	78	25	4.57	2,120	240
Quality Control	NR	51.3	52.5	4.56	1,411	NR
True Value QC	NR	50.0	50.0	4.00	1,413	NR
% Recovery	NR	103	105	114	99.8	NR
Relative Percent Difference	NR	1.4	4.9	13.1	1.4	NR

METHODS: SM3500-Ca-D 3500-Mg E 8049 120.1 310.1

	Cl ⁻ (mg/L)	SO ₄ (mg/L)	CO ₃ (mg/L)	HCO ₃ (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	04/25/08	04/28/08	04/25/08	04/25/08	04/25/08	04/25/08
H14710-1 MONITOR WELL #1	516	106	0	293	7.07	1,270
Quality Control	490	26.0	NR	976	6.98	NR
True Value QC	500	25.0	NR	1000	7.00	NR
% Recovery	98.0	104	NR	97.6	99.7	NR
Relative Percent Difference	2.0	13.6	NR	2.4	1.0	NR

METHODS: SM4500-Cl-B 375.4 310.1 310.1 150.1 160.1

Kristin Suproko
Chemist

04/29/08
Date

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HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 07/10/08
Reporting Date: 07/17/08
Project Number: NOT GIVEN
Project Name: BD H-19 VENT
Project Location: T21S R37E SEC19 H-LEA COUNTY, NM

Sampling Date: 07/08/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: HM/KS

LAB NUMBE SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity (mgCaCO ₃ /L)
ANALYSIS DATE:	07/16/08	07/15/08	07/15/08	07/16/08	07/11/08	07/11/08
H15143-1 MONITOR WELL #1	368	78	30	4.42	2,140	236
Quality Control	NR	52.1	51.0	1.95	1,419	NR
True Value QC	NR	50.0	50.0	2.00	1,413	NR
% Recovery	NR	104	102	97.7	100	NR
Relative Percent Difference	NR	< 0.1	< 0.1	2.5	0.8	NR

METHODS:	SM3500-Ca-D	3500-Mg E	8049	120.1	310.1
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	Cl (mg/L)	SO ₄ (mg/L)	CO ₃ (mg/L)	HCO ₃ (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	07/11/08	07/15/08	07/11/08	07/11/08	07/11/08	07/14/08
H15143-1 MONITOR WELL #1	560	95.5	0	288	7.36	1,400
Quality Control	500	42.8	NR	1010	7.03	NR
True Value QC	500	40.0	NR	1000	7.00	NR
% Recovery	100	107	NR	101	100	NR
Relative Percent Difference	2.0	0.9	NR	2.5	< 0.1	NR

METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1
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Krista Supers
Chemist

07/17/08
Date

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HOBBS, NM 88240
FAX TO: (575) 397-1471

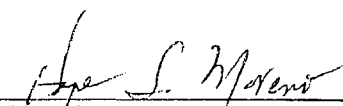
Receiving Date: 07/10/08
Reporting Date: 07/15/08
Project Number: NOT GIVEN
Project Name: BD H-19 VENT
Project Location: T21S R37E SEC19 H ~ LEA CO., NM

Sampling Date: 07/08/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: AB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		07/14/08	07/14/08	07/14/08	07/14/08
H15143-1	MONITOR WELL #1	<0.001	<0.001	<0.001	< 0.006
Quality Control		0.080	0.102	0.104	0.309
True Value QC		0.100	0.100	0.100	0.300
% Recovery		80.0	102	104	103
Relative Percent Difference		4.5	3.6	2.2	2.9

METHOD: EPA SW-846 8021B

TEXAS NELAP CERTIFICATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE, AND TOTAL XYLENES.



Analyst

07-16-08

Date

H15143WB RICE

Cardinal Laboratories, Inc.

101 East Marland • Hobbs, New
Mexico 88240
Tel (505) 383-2326
Fax (505) 393-2476

Company Name:	BILL TO	Company:	PO#
RICE Operating Company	RICE Operating Company		
Project Manager:	Address:		
Hack Conder	122 W Taylor Street ~ Hobbs, New Mexico 88240		
Address:	(Street, City, Zip)	Phone #:	Fax #:
122 W Taylor Street ~ Hobbs, New Mexico 88240		(575) 393-9174	(575) 397-1471
Phone #:	Fax #:		
(575) 393-9174	(575) 397-1471		

Project #: _____ **Project Name:** _____

BD H-19 Vent

Project Location:

T21S R37E Sec19 H ~ Lea County New Mexico

Sampler Signature: Rozanne Johnson (505)631-9310

rozanne@valornet.com

LAB #	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	WATER	SOIL	AIR	SLUDGE	MATRIX	PRESERVATIVE METHOD	SAMPLING	
										DATE (2008)	TIME
									HCL (2.40ml VOA)	HNO ₃	NONE
									NaHSO ₄	H ₂ SO ₄	ICE (1-1liter HDPE)
									NONE		

[illegible]

Relinquished by: <i>Berzanne Johnson</i>	Date: <i>7-10-08</i>	Time: <i>4:00</i>
Relinquished by: <i>Cathy Wallace</i>	Date: <i>7-10-08</i>	Time: <i>4:01</i>
Delivered By: <i>Cathy Wallace</i>	Date: <i>7-10-08</i>	Time: <i>5:00</i>
Sample Condition Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		
CHECKED BY: <i>MCYB</i>		
(Initials) <i>MCYB</i>		

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

ANALYSIS REQUEST
(Circle or Specify Method No.)[illegible]

Phone Result

For Results

REMARKS:

Email Results to:

uweinheimer@riceswd.com

rozanne@valornet.com



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

Receiving Date: 10/10/08
Reporting Date: 10/14/08
Project Number: NOT GIVEN
Project Name: BD H-19 VENT
Project Location: T21S-R37E-SEC19 H ~ LEA CO., NM

Sampling Date: 10/09/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: HM/TR

LAB NUMBE SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (μ S/cm)	T-Alkalinity (mgCaCO ₃ /L)
ANALYSIS DATE:	10/13/08	10/13/08	10/13/08	10/13/08	10/10/08	10/10/08
H16091-1 MONITOR WELL #1	296	75.4	29.2	4.2	1,800	208
Quality Control	NR	48.1	48.6	2.92	1,416	NR
True Value QC	NR	50.0	50.0	3.00	1,413	NR
% Recovery	NR	96.2	97.2	97.3	100	NR
Relative Percent Difference	NR	<0.1	4.8	3.0	0.2	NR

METHODS:	SM3500-Ca-D	3500-Mg E	8049	120.1	310.1
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	Cl (mg/L)	SO ₄ (mg/L)	CO ₃ (mg/L)	HCO ₃ (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	10/10/08	10/13/08	10/10/08	10/10/08	10/10/08	10/10/08
H16091-1 MONITOR WELL #1	468	86	0	254	7.15	1,210
Quality Control	490	44.4	NR	988	7.09	NR
True Value QC	500	40.0	NR	1000	7.00	NR
% Recovery	98.0	111	NR	98.8	101	NR
Relative Percent Difference	2.0	1.1	NR	<0.1	1.3	NR

METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1
----------	-------------	-------	-------	-------	-------	-------

Way S. Moore
Chemist

10-16-08
Date

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

Receiving Date: 10/10/08
Reporting Date: 10/13/08
Project Number: NOT GIVEN
Project Name: BD H-19 VENT
Project Location: T21S-R37E-SEC19 H ~ LEA CO., NM

Sampling Date: 10/09/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		10/10/08	10/10/08	10/10/08	10/10/08
H16091-1	MONITOR WELL #1	<0.001	<0.001	<0.001	<0.003
Quality Control		0.051	0.053	0.050	0.158
True Value QC		0.050	0.050	0.050	0.150
% Recovery		102	106	100	105
Relative Percent Difference		0.8	0.4	1.6	1.3

METHOD: EPA SW-846 8021B

TEXAS NELAP CERTIFICATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE,
AND TOTAL XYLENES.


Chemist


Date

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