AP - 47

STAGE 1 & 2 REPORTS

DATE: 6-4-08

Hansen, Edward J., EMNRD

From: Jeff Kindley [jkindley@hec-enviro.com]
Sent: Friday, June 06, 2008 2:52 PM
To: Price, Wayne, EMNRD; Hansen, Edward J., EMNRD
Cc: hconder@riceswd.com
Subject: Closure Request for ROC BD SWD F-17
Attachments: closurerequest.pdf

Gentlemen,

Please find enclosed a copy of the request for closure of the ROC BD SWD F-17 junction box located in Lea County, New Mexico (Case #1R0426-14 (AP-47)).

A hard copy has been sent in the mail.

If you have any questions or comments pertaining to the closure please do not hesitate to contact either Tim Reed or myself at (432) 682-4559.

Thanks,

Jeff Kindley, P.G.
Highlander Environmental Corp.
1910 North Big Spring Street
Midland, Texas 79707

Highlander Environmental Corp.

Midland, Texas

CERTIFIED MAIL
RETURN RECEIPT NO. 7002 2410 0000 1387 9192

June 4, 2008

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

Re: Request for Closure at the Blinebry Drinkard (BD) SWD System Junction Box F-17, Unit F, Section 17, T-21-S, R-37-E, Lea County, New Mexico, NMOCD CASE #1R0426-14 (AP-47).

Dear Mr. Price:

RICE Operating Company (ROC) has retained Highlander Environmental Corp. (Highlander) to address potential environmental concerns at the above-referenced site. ROC is the service provider (agent) for the Blinebry Drinkard (BD) SWD System (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 Partners, who provide all operating capital on a percentage ownership/usage basis.

Background

As part of the ROC Junction Box Upgrade Workplan, starting on September 17, 2002, the junction box was removed and the Site was delineated vertically and horizontally with a backhoe. The Site was excavated to the approximate dimensions of 20 feet x 20 feet x 12 feet. Chloride impact was consistent vertically. No TPH impact was indicated.

During the excavation, an older junction box was discovered approximately 10 feet south of the existing location. On November 18, 2002, a soil boring was placed near this old box location and advanced to a depth of 75 feet. Chloride concentrations declined with depth, however, chloride impact to groundwater was observed.

Also on November 18, 2002, a 2 inch diameter monitor well was installed to a total depth of 85 feet. On December 13, 2002, ROC notified the NMOCD of groundwater impact,

and on November 7, 2003 ROC submitted a Junction Box Disclosure Form to the NMOCD. Groundwater has been sampled and analyzed on a quarterly basis since June 2003. The quarterly sampling has confirmed that there is no hydrocarbon impact to groundwater at this Site. The excavation was backfilled and the junction moved 45 feet south of the original site. The Site location is shown on Figures 1 and 2.

On March 17, 2005 an Investigation and Characterization Plan (ICP) was submitted to the NMOCD. On May 5, 2005, Daniel Sanchez with the NMOCD requested a Rule 19, Stage I Abatement Plan for this site. On July 12, 2005 a Stage I Abatement Plan was submitted to the NMOCD. The Stage I Abatement Plan approval was received, dated February 23, 2006.

Stage 1 Abatement Plan Implementation

As part of the Stage 1 Abatement Plan two additional monitor wells were proposed for the site. These two monitor wells (MW-2 and MW-3) were installed on March 22-23, 2006. The well locations are shown on Figure 3. MW-2 was placed down-gradient of MW-1 and MW-3 was placed up-gradient. The wells were developed and sampled on March 27, 2006.

Also as part of the Stage I Abatement Plan, a water well database search was performed to encompass a ½ mile radius around the site. ROC performed an internet search of the New Mexico Office of the State Engineer (OSE) and the United States Geologic Survey (USGS) databases for water wells within a ½ mile radius of the subject site.

RULE 19 RELEASE REQUEST and SOIL WORK PLAN

In a report to the NMOCD, dated August 10, 2006, ROC requested a release from additional Stage 1 and Stage 2 requirements and proposed to continue monitoring of the site. Additionally, ROC proposed to complete assessment and remediation of chloride impacted soils for closure under NMOCD approval. The horizontal extent of chloride impact to soils would be evaluated with a backhoe. Once evaluated, the soils will be excavated down below the root zone (minimum of 4.0' below ground surface) and an evapotranspiration barrier (non-compacted clay cap) will be placed into the excavation. The excavated soils will be evaluated for placement back into the excavation to ensure that it will sustain vegetative cover. Once completed, a closure report will be prepared and submitted for the soils portion of this investigation.

The New Mexico Oil Conservation Division Responded to the above-mentioned report on September 27, 2006, in an email memorandum. In that memorandum, the NMOCD stated that they required some additional data in order to continue evaluation of the request for Release from Rule 19. Specifically, the NMOCD requested an area map showing surrounding water wells, monitoring wells and any other sites that may have an impact on this site, and that ROC demonstrate that the groundwater gradient is accurate. A response

letter with the requested data was submitted on December 27, 2006.

In a meeting between the NMOCD, Rice Operating and Highlander on July 18, 2007 and January 23, 2008, it was agreed the source of the chlorides appeared to be from an upgradient source based on groundwater gradient and chloride concentration maps. As such, it was agreed that Rice will reissue the original closure report with the request of no additional groundwater monitoring.

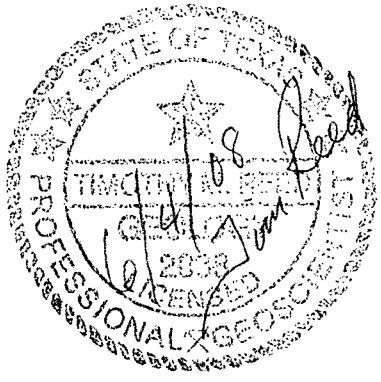
Monitor Well MW-2, down-gradient, has shown consistently low chloride concentrations ranging from 56 mg/L to 66.8 mg/L. See attached tables. The up-gradient well, MW-3 shows a fluctuation in the chloride concentration ranging from 830 mg/L to 2,160 mg/L and appears to indicate an up-gradient source of groundwater impact. In reviewing the historical data for MW-1 for the first 18 months of sampling, the chloride concentrations fluctuated between 177 mg/L and 886 mg/L. Then in January 2005, the chloride concentration jumped to 2,970 mg/L and has since ranged from 1,890 mg/L to 2,510 mg/L. Chloride concentrations decreased dramatically in MW-1 for the 1st and 2rd quarter sampling events in 2008 (780 and 436 mg/L), respectively. Considering the concentration found in the upgradient monitor well, it appears that the impact to MW-1 may be affected by an up-gradient source of contamination.

Conclusions

1. In 2007, there were no BTEX constituents detected at or above reporting limits for any of the monitor wells, and no BTEX has ever been detected in MW-1, nearest the junction box.
2. Chloride and total dissolved solid (TDS) concentrations from monitor wells MW-1 and upgradient MW-3 exceeded the New Mexico Water Quality Control Commission (WQCC) standards of 250 mg/L for chloride and 1000 mg/L for TDS in all sampling events.
3. Monitor Well MW-2, down-gradient, has shown consistently low chloride concentrations ranging from 56 mg/L to 66.8 mg/L. The up-gradient well, MW-3 has shown a fluctuation in chloride concentration ranging from 830 mg/L to 1,490 mg/L and appears to indicate an up-gradient source of groundwater impact. The historical data for MW-1, for the first 18 months of sampling, showed the chloride concentrations fluctuated between 177 mg/L and 886 mg/L. Then in January 2005, the chloride concentration jumped to 2,970 mg/L and has since ranged from 1,890 mg/L to 2,510 mg/L. Chloride concentrations decreased dramatically in MW-1 for the 3rd and 4th quarter sampling event (637 and 720 mg/L). Considering the concentration found in the upgradient monitor well, it appears that the impact to MW-1 may be at least somewhat affected by an up-gradient source of contamination.

Since it appears there is an upgradient source for the chloride concentrations, Rice is

requesting a release from the Stage 1/Stage 2 requirements for this site with no additional groundwater monitoring. Upon approval, the horizontal soil delineation outlined above will be implemented in a timely manner, dependent upon availability of local contractors. The NMOCD will be notified at least 48 hours in advance of sampling or construction activities. Upon completion, the monitor wells will be properly plugged and a final closure report will be prepared and submitted to the NMOCD for approval.



Respectfully Submitted,
HIGHLANDER ENVIRONMENTAL CORP.

Timothy M. Reed, P.G.
Vice President

cc: ROC, Edward Hansen – NMOCD

FIGURES

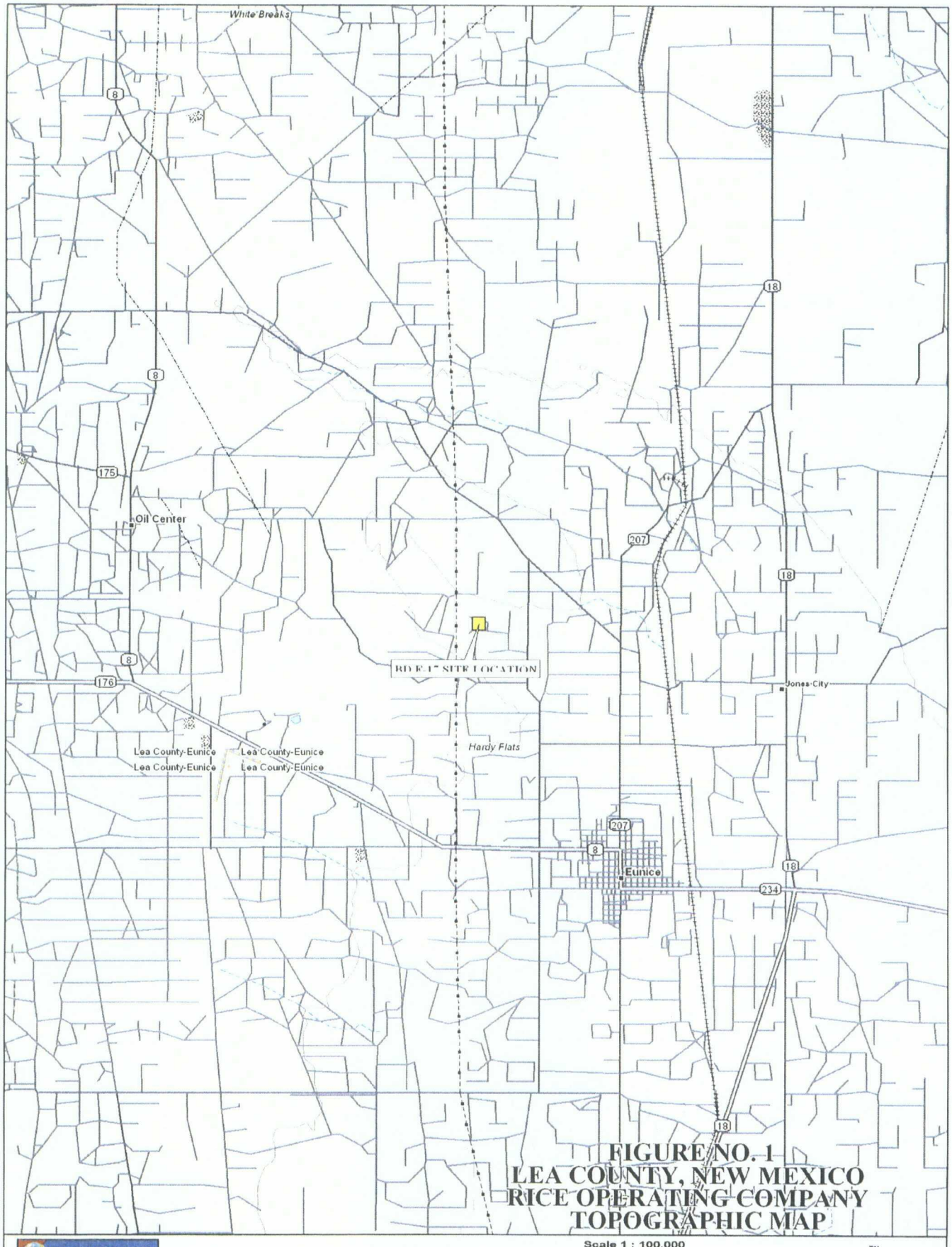


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP

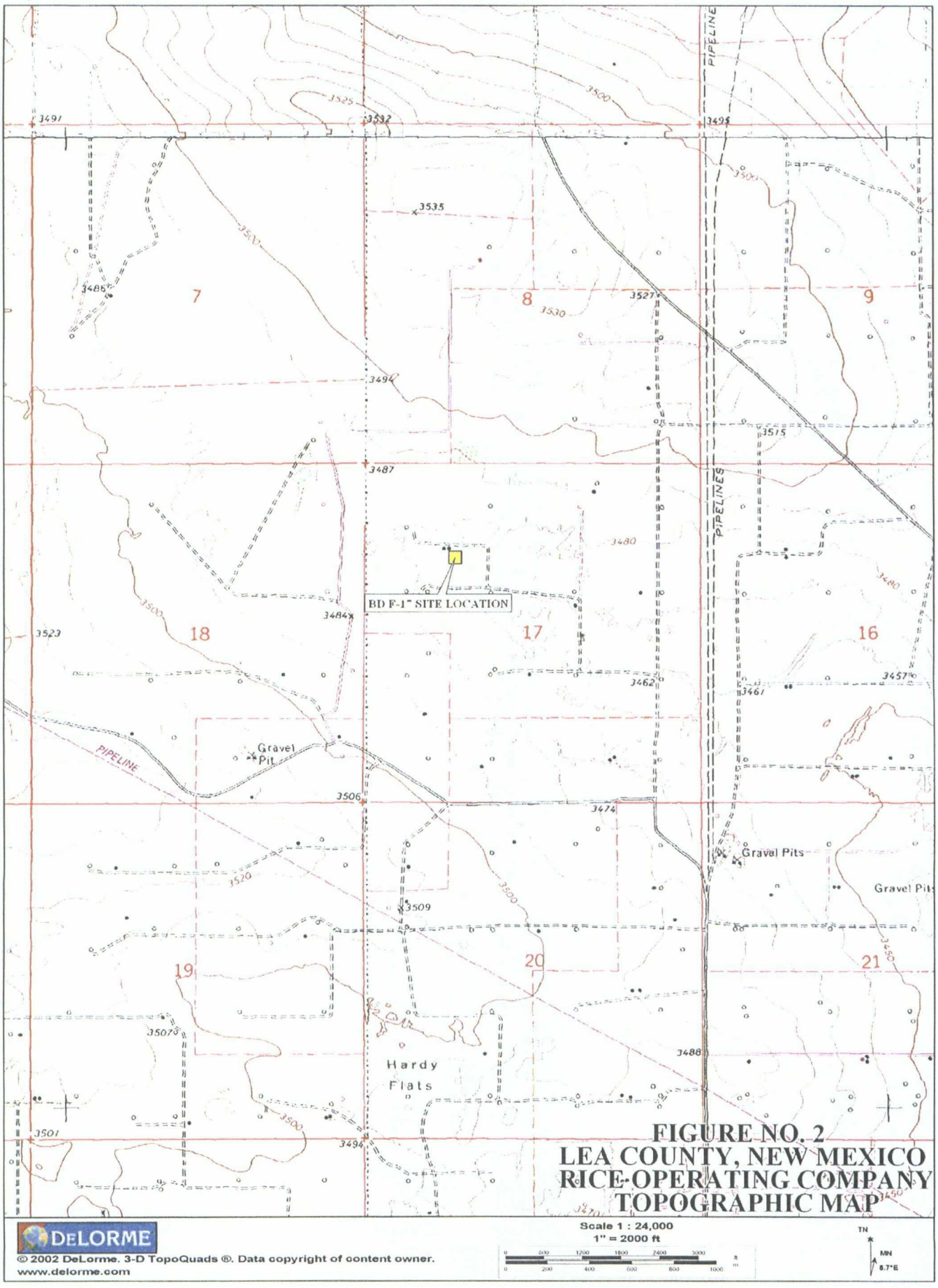


FIGURE NO. 2
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP

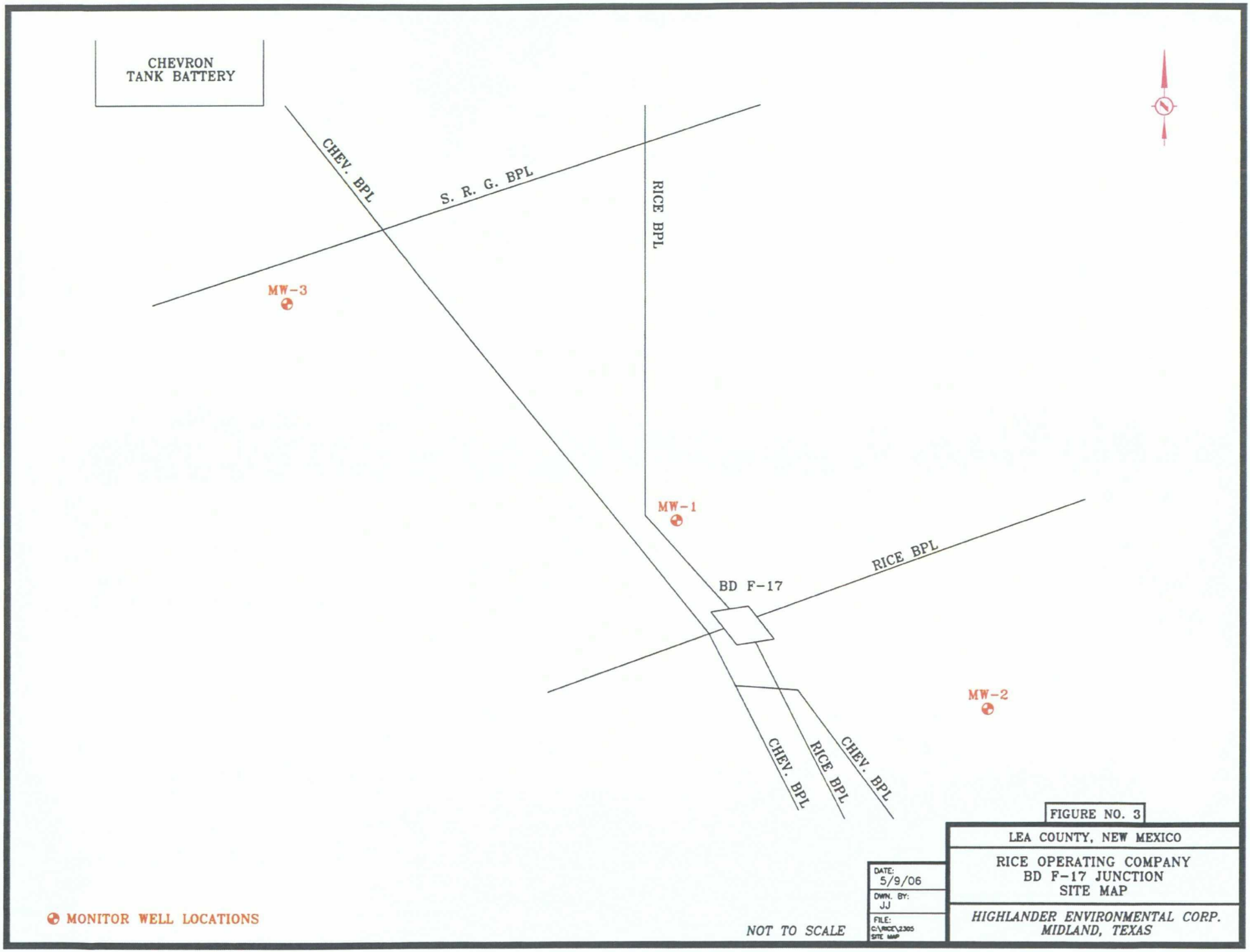


FIGURE NO. 3

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY
BD F-17 JUNCTION
SITE MAP

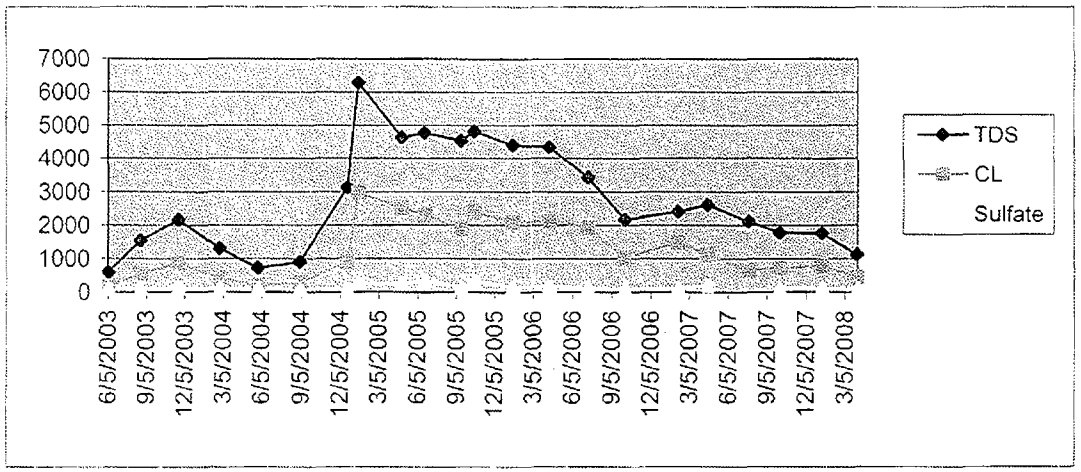
HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

TABLES

Rice Engineering Operating
F-17
Lea County, New Mexico

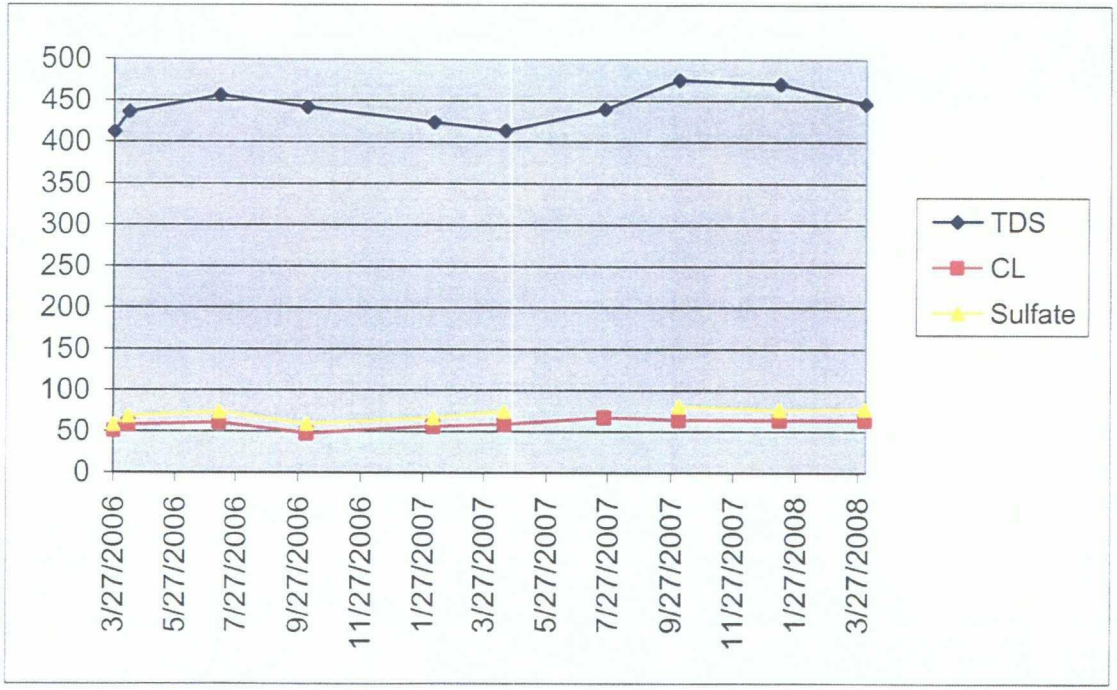
MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	75.67	85.20	1.5240	4.5	06/05/03	177	589	<0.001	<0.001	<0.001	<0.001	97.6	
1	75.73	85.12	1.50	4.5	08/22/03	549	1540	<0.001	<0.001	<0.001	<0.001	112	
1	75.75	84.85	1.456	4.3	11/20/03	851	2160	<0.001	<0.001	<0.001	<0.001	132	
1	75.73	84.48	1.40	4.2	02/25/04	415	1300	<0.001	<0.001	<0.001	<0.001	96.8	
1	71.75	85.12	2.13	6.4	05/27/04	195	726	<0.001	<0.001	<0.001	<0.001	97.8	
1	75.48	84.60	1.46	4.4	09/02/04	284	896	<0.001	<0.001	<0.001	<0.001	90.6	Lt brown
1	75.10	84.00	1.42	4.5	12/21/04	886	3120	<0.001	<0.001	<0.001	<0.001	96.2	
1	75.18	84.07	1.42	4.26	01/16/05	2970	6280	<0.001	<0.001	<0.001	<0.001	257	Re-sample
1	75.21	84.20	1.44	5.0	04/28/05	2510	4640	<0.001	<0.001	<0.001	<0.001	259	
1	75.20	84.15	1.43	10.0	06/21/05	2310	4770	<0.001	<0.001	<0.001	<0.001	339	
1	75.21	84.20	1.40	12.0	09/16/05	1890	4540	<0.001	<0.001	<0.001	<0.001	147	
1	75.20	84.20	1.40	5.0	10/17/05	2400	4830	<0.001	<0.001	<0.001	<0.001	319	
1	85.15	84.20	1.40	8.0	01/16/06	2090	4410	<0.001	<0.001	<0.001	<0.001	154	Silt to clear
1	75.20	84.20	1.40	8.0	04/11/06	2130	4340	<0.001	<0.001	<0.001	<0.001	167	Silt to clear
1	75.22	84.20	1.40	10.0	07/11/06	1930	3440	<0.001	<0.001	<0.001	<0.001	126	Clear
1	75.22	84.20	1.40	10.0	10/05/06	1020	2170	<0.001	<0.001	<0.001	<0.001	98.1	Clear
1	75.22	87.35	1.90	8.0	02/06/07	1480	2410	<0.001	<0.001	<0.001	<0.001	120	Clear
1	75.24	87.35	1.90	8.0	04/16/07	1110	2610	<0.001	<0.001	<0.001	<0.001	202	Clear
1	75.25	87.35	1.90	8.0	07/23/07	637	2110	<0.001	<0.001	<0.001	<0.002		Clear
1	75.24	87.35	1.90	8.0	10/04/07	720	1765	<0.001	<0.001	<0.001	<0.003	107	Clear
1	75.22	87.35	1.90	8.0	01/11/08	780	1760	<0.001	<0.001	0.001	0.004	115	Clear
1	75.23	87.35	1.90	8.0	04/03/08	436	1120	<0.001	<0.001	<0.001	<0.003	85.7	Clear

Rice Engineering Operating
F-17
Lea County, New Mexico
MW-1



Rice Engineering Operating
F-17
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
2	75.55	90.00	2.30	10.0	03/27/06	50.8	412	<0.001	<0.001	<0.001	<0.001	58.4	
2	75.90	90.00	2.30	10.0	04/11/06	57.9	436	<0.001	<0.001	<0.001	<0.001	68.2	
2	75.60	90.00	2.30	10.0	07/11/06	60.5	456	<0.001	<0.001	<0.001	<0.001	73.3	
2	75.62	90.00	2.30	10.0	10/05/06	47.6	442	<0.001	<0.001	<0.001	<0.001	59.2	Clear no odor
2	75.61	89.44	2.20	10.0	02/06/07	56	424	<0.001	<0.001	<0.001	<0.001	66.5	Clear no odor
2	75.62	89.44	2.20	8.0	04/16/07	58.5	414	<0.001	<0.001	<0.001	<0.001	74.2	Clear no odor
2	75.68	89.44	2.20	8.0	07/23/07	66.8	440	<0.001	<0.001	<0.001	<0.002		Sandy
2	75.61	89.44	2.20	8.0	10/04/07	64	475	<0.001	<0.001	<0.001	<0.003	80.5	Clear no odor
2	75.59	89.52	2.20	8.0	01/11/08	64	470	<0.001	<0.001	<0.001	<0.003	76	Clear no odor
2	75.61	89.52	2.20	8.0	04/03/08	64	446	<0.001	<0.001	<0.001	<0.003	77.2	Clear no odor



Rice Engineering Operating
F-17
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
3	73.91	88.00	2.30	10.0	03/27/06	901	2240	<0.001	<0.001	<0.001	<0.001	126	
3	73.93	88.00	2.30	10.0	04/11/06	1340	2750	<0.001	<0.001	<0.001	<0.001	138	
3	73.91	88.00	2.30	10.0	07/11/06	1680	3300	<0.001	<0.001	<0.001	<0.001	125	
3	73.95	88.00	2.20	10.0	10/05/06	1600	3900	<0.001	<0.001	<0.001	<0.001	134	Clear
3	73.92	87.84	2.20	10.0	02/06/07	1490	2350	<0.001	<0.001	<0.001	<0.001	132	Clear
3	73.92	87.84	2.20	10.0	04/16/07	999	2950	<0.001	<0.001	<0.001	<0.001	177	Clear
3	73.98	87.84	2.20	8.0	07/23/07	1040	3190	<0.001	<0.001	<0.001	<0.002		Clear
3	73.97	87.84	2.20	8.0	10/04/07	830	2235	<0.001	<0.001	<0.001	<0.003	150	Clear
3	73.95	87.79	2.20	8.0	01/11/08	2160	4845	<0.001	<0.001	<0.001	<0.003	130	Clear
3	73.96	87.79	2.20	8.0	04/03/08	2140	4780	<0.001	<0.001	<0.001	<0.003	221	Clear