

AP - 47

STAGE 1 & 2 REPORTS

DATE:

6-24-11



TETRA TECH

CERTIFIED MAIL
RETURN RECEIPT NO. 7008 3230 0001 9310 7518

June 24, 2011

Mr. Ed Hansen
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RECEIVED OCD
2011 JUN 27 P 2:38

**Re: TERMINATION REQUEST
F-17 JUNCTION BOX, BD SWD SYSTEM
UNIT "F", SEC. 17, T21S, R37E
LEA COUNTY, NEW MEXICO
NMOCD # AP-47**

Mr. Hansen:

Rice Operating Company (ROC) has completed the soils work plan as outlined in the Request for Closure submittal dated June 4, 2008. The initial Request for Closure was denied by the NMOCD in an email dated January 8, 2009. However, in the email, the NMOCD requested that one additional monitor well be installed up gradient of the tank battery located up gradient of MW-3 and the proposed soil work at the former ROC junction box be completed. Excavation dimensions were submitted on July 27, 2010 and approved by the NMOCD on July 27, 2010. The site location is shown on Figures 1 and 2.

As per the NMOCD request, ROC was onsite July 26, 2010 to oversee the installation of up gradient monitor well MW-4. The monitor well was installed northwest of the tank battery. See Appendix A for attached completion diagram and Figure 3 for monitor well locations. Since the installation of the well in July 2010, three consecutive quarterly sampling events have been completed at the site. Analytical results indicate the chloride concentrations have consistently been 64 mg/L.

The two monitor wells (MW-1 and MW-3), which have chloride impacts at the site, have shown a steady decrease in chloride concentration over time. Monitor

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



TETRA TECH

well MW-1, which is located southeast of the former junction box, has chloride concentrations which have decreased from a high of 2,970 mg/L in January 16, 2005 to 320 mg/L in February 7, 2011. Monitor well MW-3, which is located down gradient of the tank battery and up gradient of the former ROC junction box has shown a steady decline in chloride concentrations from April 20, 2010 (1,160 mg/L) to February 7, 2011 (570 mg/L). See attached Tables. With the chloride concentrations in MW-3 exceeding those in MW-1, it appears the chloride concentration at the site is from an up gradient source.

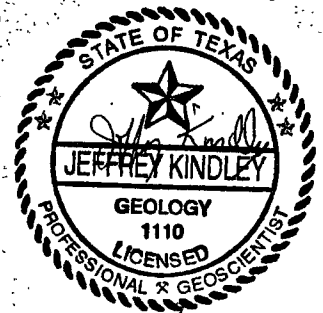
As previously approved, from September 20 to October 5, 2010 ROC was onsite to excavate chloride impacted soils within the former BD F-17 Junction Box area. An area measuring 38 feet wide by 38 feet long by 4.5 feet deep (covering the 15 foot south boring by 1 foot) was excavated with approximately 216 cubic yards of soil transported offsite for disposal at Sundance Services, Inc. of Eunice, New Mexico. Upon completion of the excavation, the site was padded with 6 inches of blow sand, and a 20-mil polyethylene liner was installed at 4 feet below ground surface (bgs) in order to impede further vertical migration of the remaining chlorides within the soils. See Figure 4 for liner location. Approximately 264 yards of clean soil was imported along with hay, blended with existing soils, and placed over the 20-mil liner. See Appendix B – Laboratory Data for analysis of imported clean soils. The soils were then brought up to surface grade and a silt netting fence placed around the site for erosion control. On October 5, 2010, the site was seeded with native vegetation. See Appendix C – Site Photographs and Appendix D – Revegetation Form.

Based on the completion activities performed at the site along with the apparent groundwater impact from an up gradient source, ROC acknowledges they have met the requirements of 19.15.30 NMAC and respectfully request Termination of this regulatory file. Upon NMOCD approval of this Termination Request, all monitoring wells (MW-1, MW-2, MW-3, and MW-4) will be plugged using a cement grout with 1% to 3% bentonite and a 3 foot cap of cement at the surface. If you require any additional information or have any questions or comments concerning the termination request, please call either Hack Conder of ROC at (575) 393-9174 or myself at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Jeff Kindley
Jeff Kindley, P.G.
Sr. Project Manager

cc: Hack Conder – ROC



FIGURES

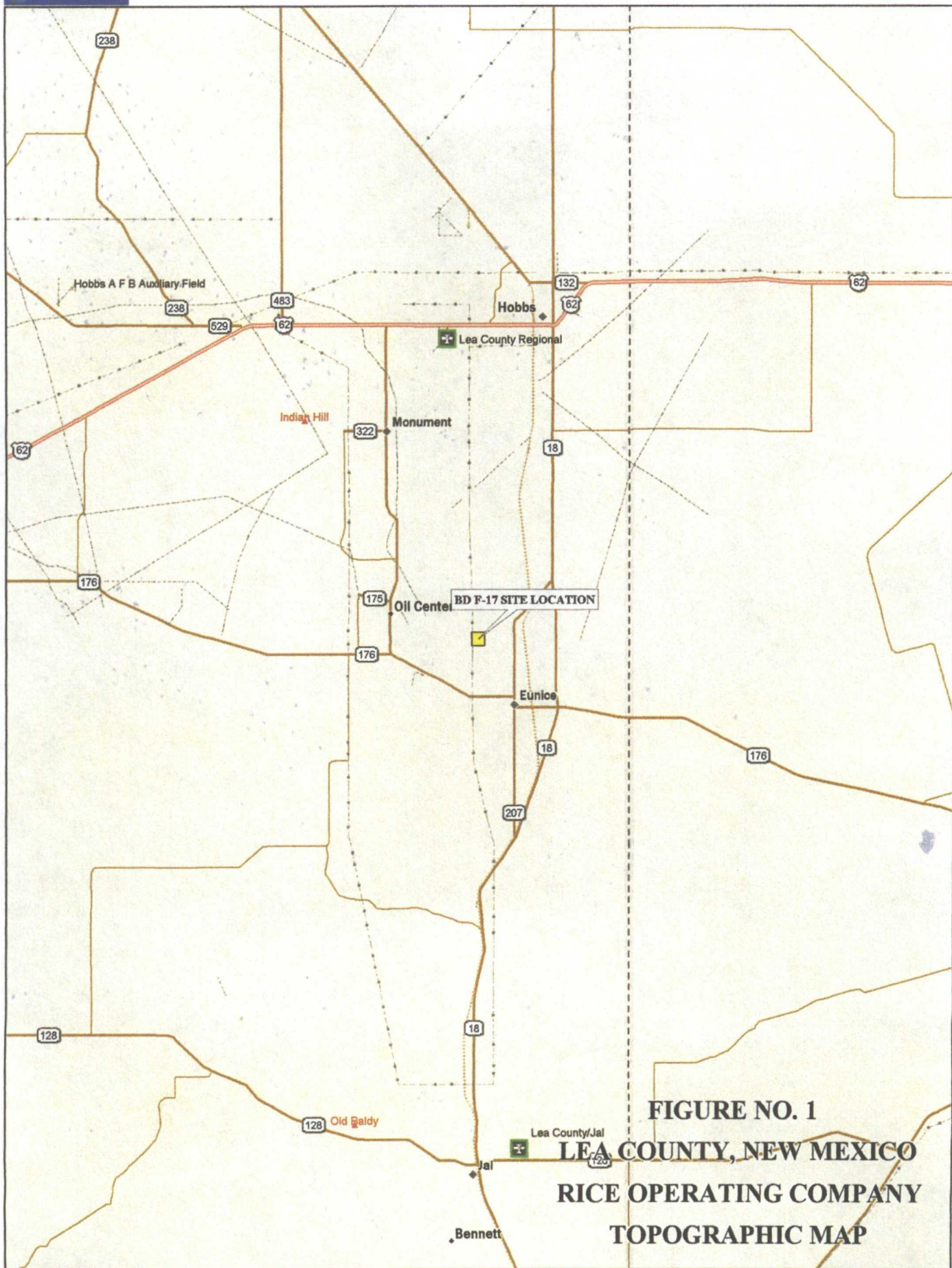


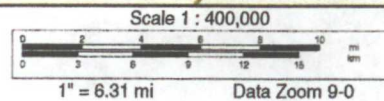
FIGURE NO. 1

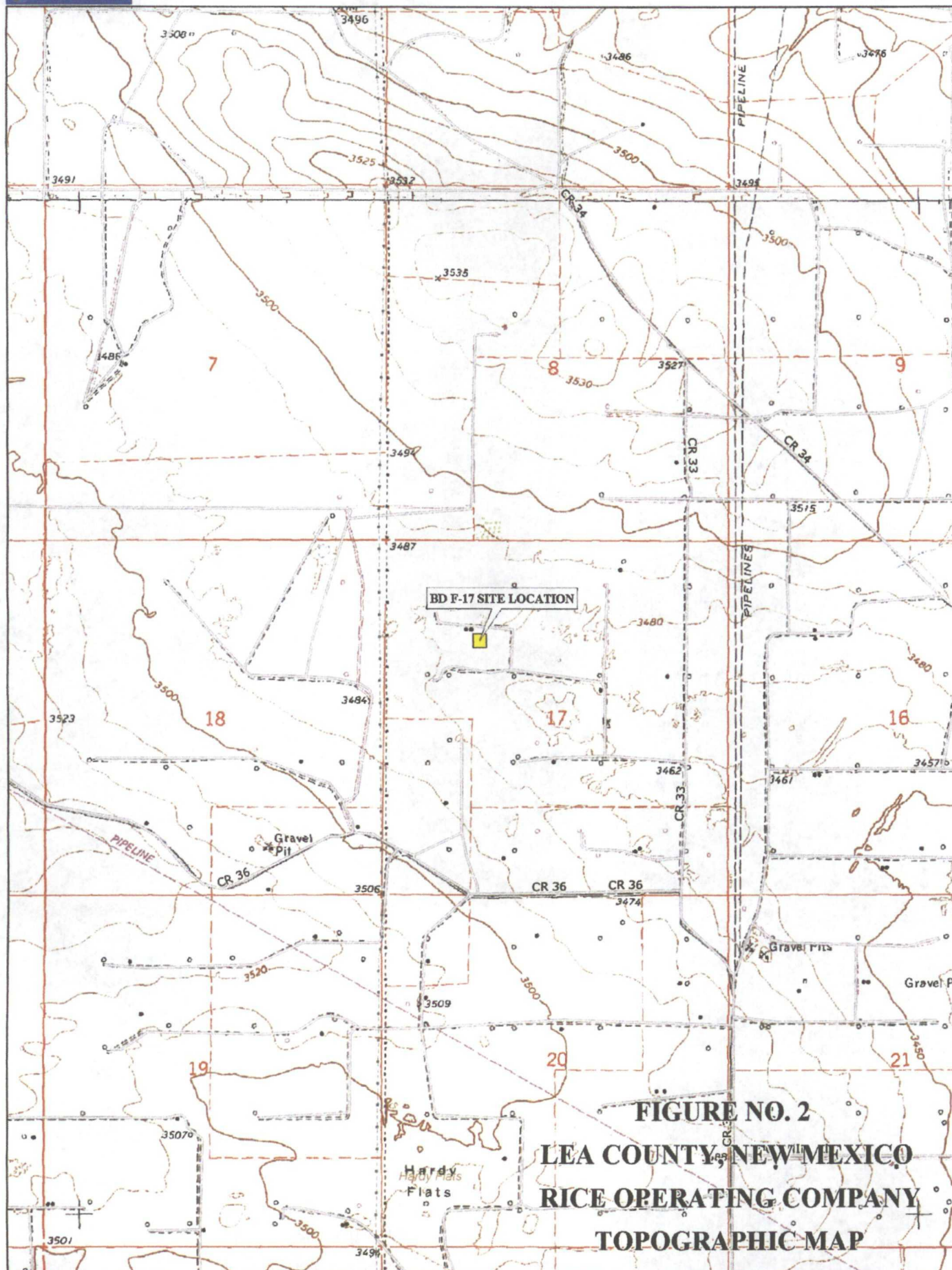
**LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP**

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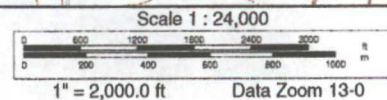




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Monitor Well Sampling Data

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
4	77.74	91.95	2.3	10	8/6/2010	64	438	<0.001	<0.001	<0.001	<0.003	84	Sand to clear No odor
4	77.76	91.95	2.3	10	10/18/2010	64	461	<0.001	<0.001	<0.001	<0.003	71.9	Sand to clear No odor
4	77.72	92.44	2.4	10	2/7/2011	64	440	<0.001	<0.001	<0.001	<0.003	73.7	Sand to clear no odor

MW 4

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	74.02	87.48	2.2	8	7/21/2010	530	1510	XXX	XXX	XXX	XXX	199	Clear No odor
3	73.99	87.48	2.2	8	10/18/2010	412	1360	XXX	XXX	XXX	XXX	194	Clear No odor
3	73.98	87.58	2.2	8	2/7/2011	570	1520	XXX	XXX	XXX	XXX	178	Clear no odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	75.28	88.4	2.1	8	7/21/2010	424	1190	XXX	XXX	XXX	XXX	112	Sand to clear No odor
1	75.27	88.4	2.1	8	10/18/2010	364	995	XXX	XXX	XXX	XXX	118	Sand to clear No odor
1	75.25	88.43	2.1	8	2/7/2011	320	912	XXX	XXX	XXX	XXX	96.8	Sand to clear no odor

MW 3

MW 1

JCT F17N

JCT F17S

MW 2

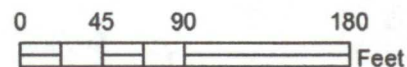
MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	75.66	89.15	2.2	8	7/21/2010	72	428	XXX	XXX	XXX	XXX	82.5	Sand to clear No odor
2	75.62	89.15	2.2	8	10/18/2010	60	472	XXX	XXX	XXX	XXX	70.2	Sand to clear No odor
2	75.62	89.25	2.2	8	2/7/2011	64	461	XXX	XXX	XXX	XXX	77.4	Sand to clear no odor



BD jct. F-17

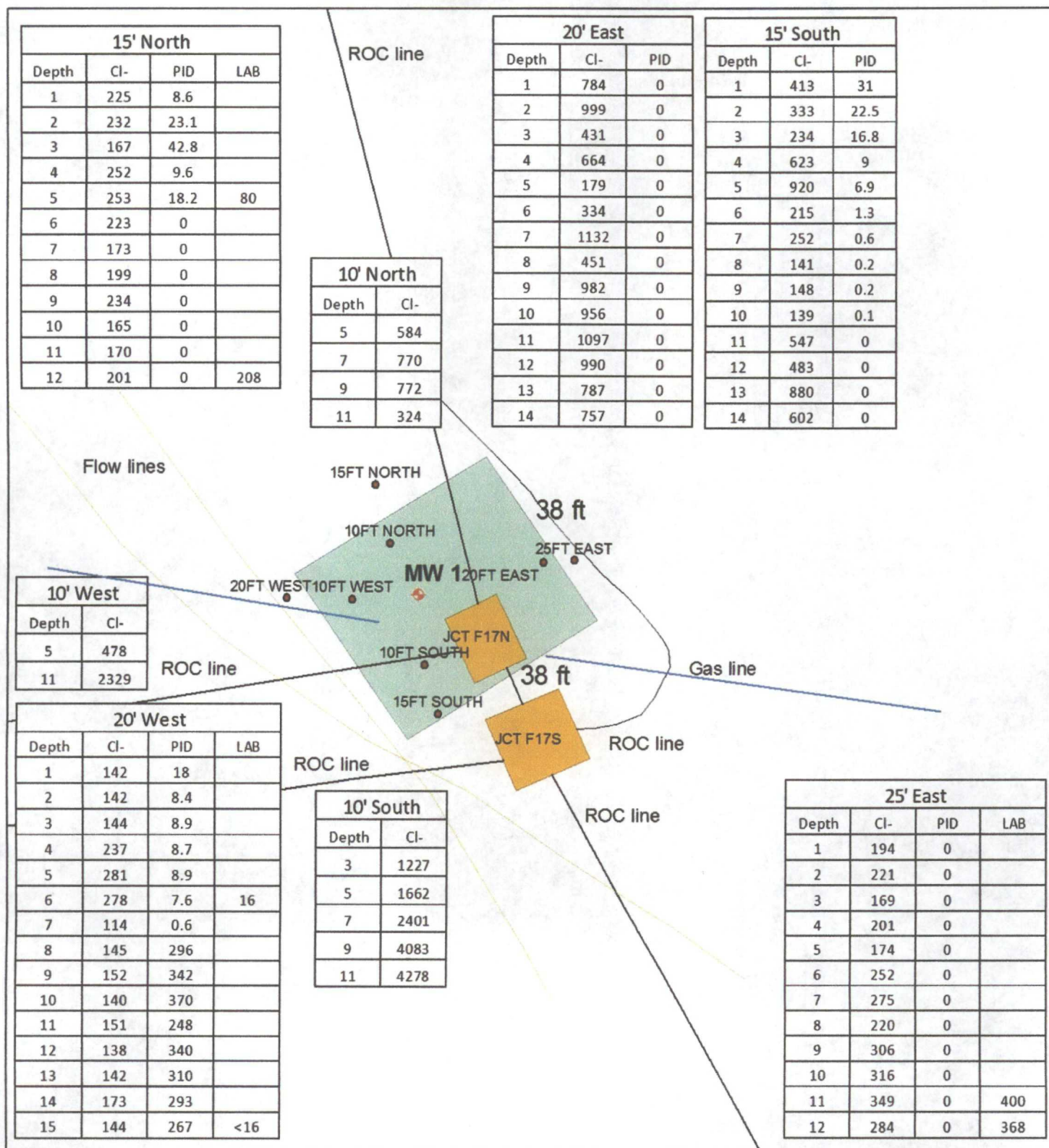
**Legals: UL/F sec. 17
T21S R37E
NMOCD Case #: AP-47**

Figure 3



Drawing date: 4/21/11
Drafted by: L. Weinheimer

Soil Data



BD Jct. F-17

Legals: UL/F, Sec. 17,
T21S, R37E
NMOCD Case #: AP-47

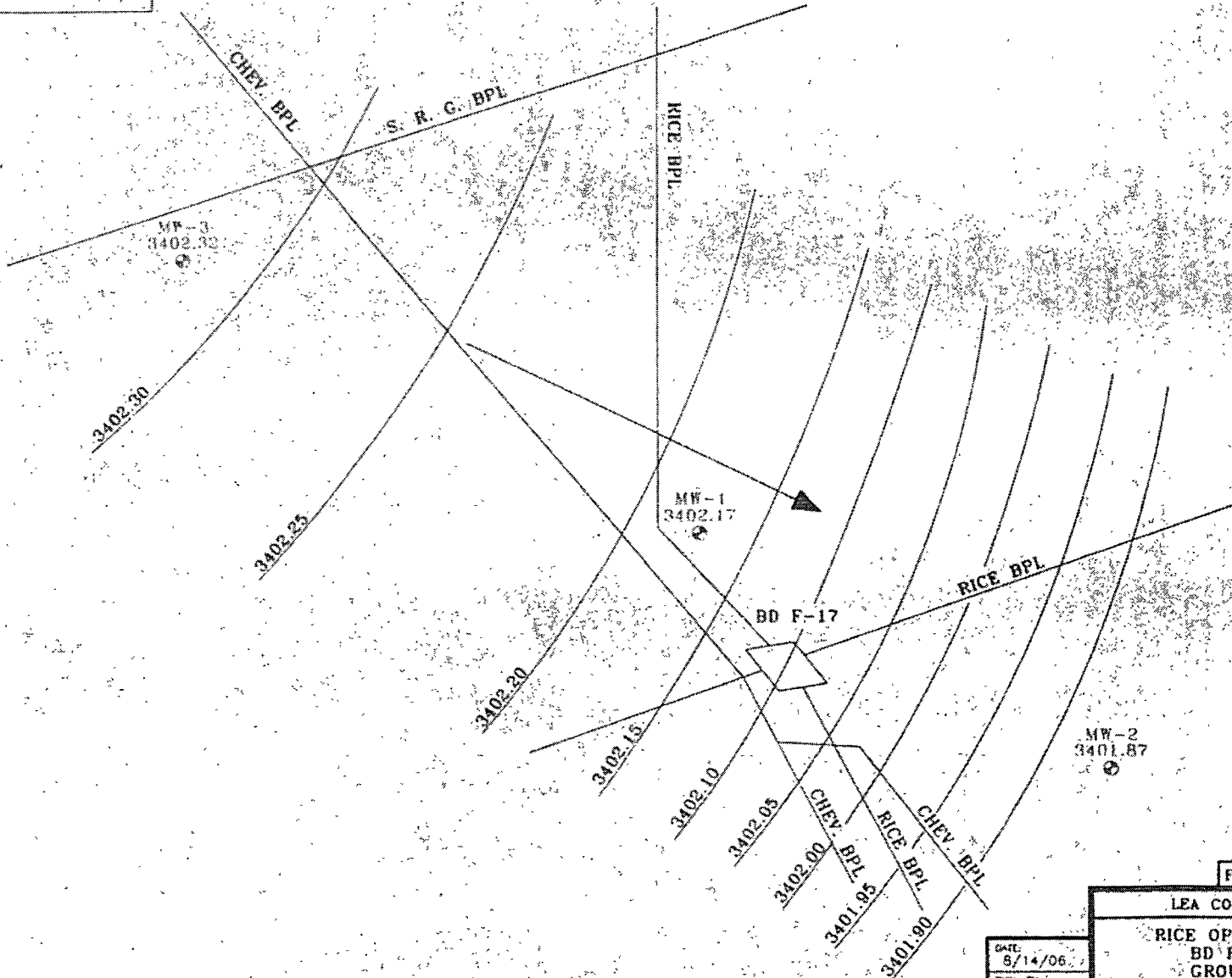
Figure 4



0 10 20 40
Feet

Drawing date: 7-27-10
Drafted by: L. Weinheimer
Revised by: T. Grieco

CHEVRON
TANK BATTERY



● MONITOR WELL LOCATIONS

NOT TO SCALE

FIGURE NO. 3

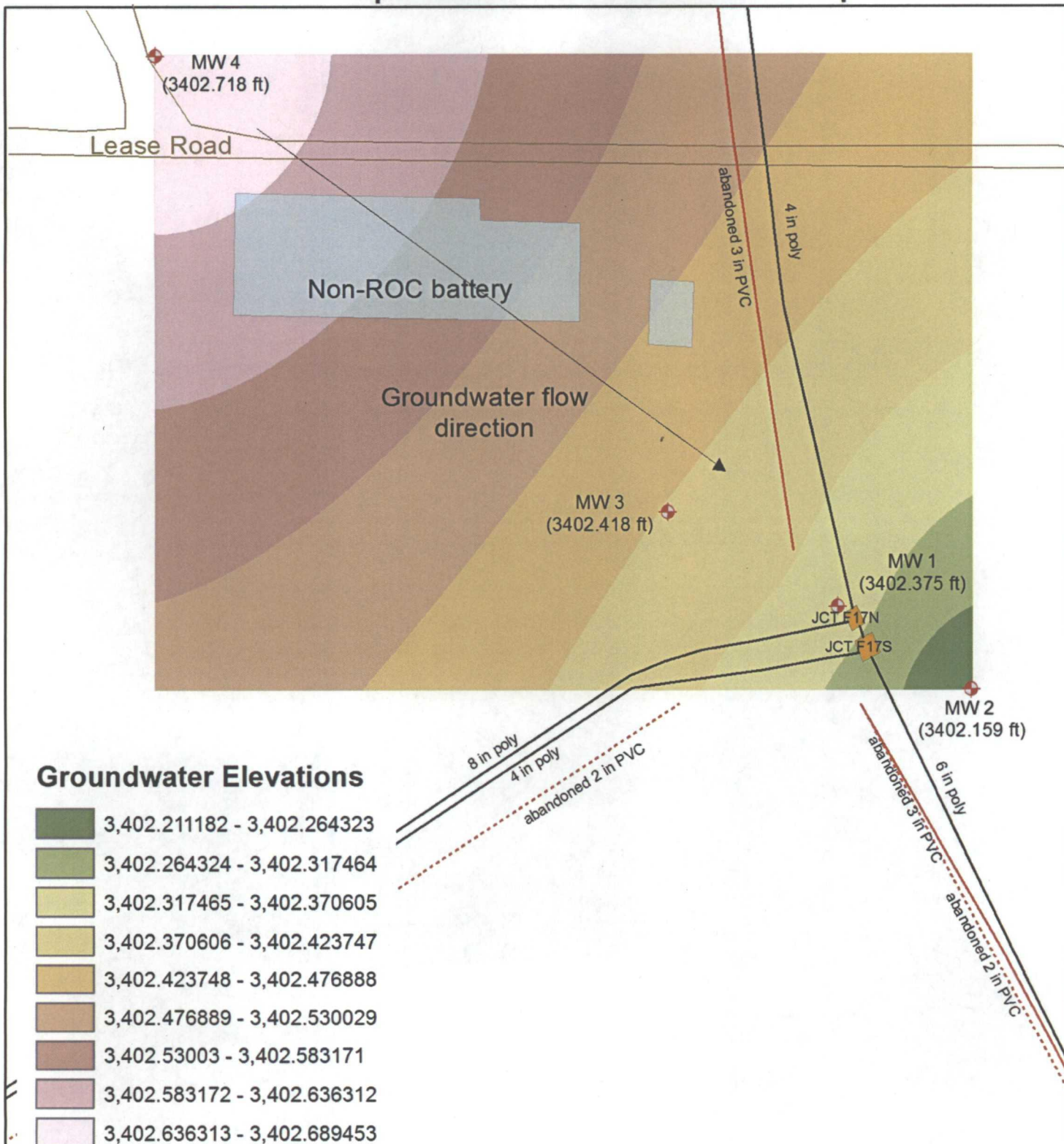
LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY
BD F-17 JUNCTION
GROUNDWATER MAP

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

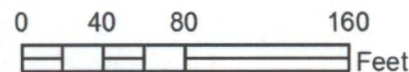
DATE:
8/14/06
DRAWN BY:
JJ
FILE:
C:\PROJECTS
GROUNDWATER MAP

Site Specific Potentiometric Map



BD JCT F-17
 Legals: UL/F SEC. 17
 T-21-S R-37-E

Case #: AP-47



Drawing date: 8/2/11
 Drafted by: L. Weinheimer

TABLES

Table 1
Rice Operating Company
BD F-17
Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl mg/L	TDS mg/L	Benzene mg/L	Toluene mg/L	Ethyl Benzene mg/L	Total Xylenes mg/L	Sulfate mg/L	Comments
1	75.67	85.20	1.5240	4.5	06/05/03	177	589	0.004	<0.001	<0.001	<0.001	97.6	xxx
1	75.73	85.12	1.50	4.5	08/22/03	549	1540	<0.001	<0.001	<0.001	<0.001	112	xxx
1	75.75	84.85	1.456	4.3	11/20/03	851	2160	<0.001	<0.001	<0.001	<0.001	132	xxx
1	75.73	84.48	1.40	4.2	02/25/04	415	1300	<0.001	<0.001	<0.001	<0.001	96.8	xxx
1	71.75	85.12	2.13	6.4	05/27/04	195	726	<0.001	<0.001	<0.001	<0.001	97.8	xxx
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	xxx
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	xxx
1	75.20	84.15	1.43	10.0	06/21/05	2310	4770	<0.001	<0.001	<0.001	<0.001	339	xxx
1	xxx	xxx	xxx	xxx	09/19/05	1890	4540	<0.001	<0.001	<0.001	<0.001	147	xxx
1	75.20	84.20	1.40	5.0	10/17/05	2400	4830	<0.001	<0.001	<0.001	<0.001	319	xxx
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
1	75.28	87.35	1.90	8.0	07/08/08	820	1960	<0.001	<0.001	<0.001	<0.003	105	Clear
1	75.31	87.35	1.90	8.0	10/08/08	530	1610	<0.001	<0.001	<0.001	<0.003	103	Clear
1	75.29	88.30	2.10	8.0	01/12/09	440	1160	xxx	xxx	xxx	xxx	101	Clear
1	75.30	88.30	2.10	8.0	04/20/09	404	1040	xxx	xxx	xxx	xxx	96.3	Clear
1	75.29	88.30	2.10	8.0	07/22/09	450	1160	xxx	xxx	xxx	xxx	94.5	Clear
1	75.30	88.30	2.10	8.0	10/15/09	450	1140	xxx	xxx	xxx	xxx	89.3	Clear/no odor
1	75.30	88.40	2.10	8.0	01/21/10	420	1120	xxx	xxx	xxx	xxx	112	Clear/no odor
1	75.27	88.40	2.10	8.0	04/20/10	370	944	xxx	xxx	xxx	xxx	118	Sand to clear
1	75.28	88.40	2.10	8.0	07/21/10	424	1190	xxx	xxx	xxx	xxx	112	Sand to clear
1	75.27	88.40	2.10	8.0	10/18/10	364	995	xxx	xxx	xxx	xxx	118	Sand to clear
1	75.25	88.40	2.10	8.0	02/07/11	320	912	xxx	xxx	xxx	xxx	96.8	Sand to clear

Graph 1
 Rice Operating Company
 MW-1
 BD F-17
 Lea County, New Mexico

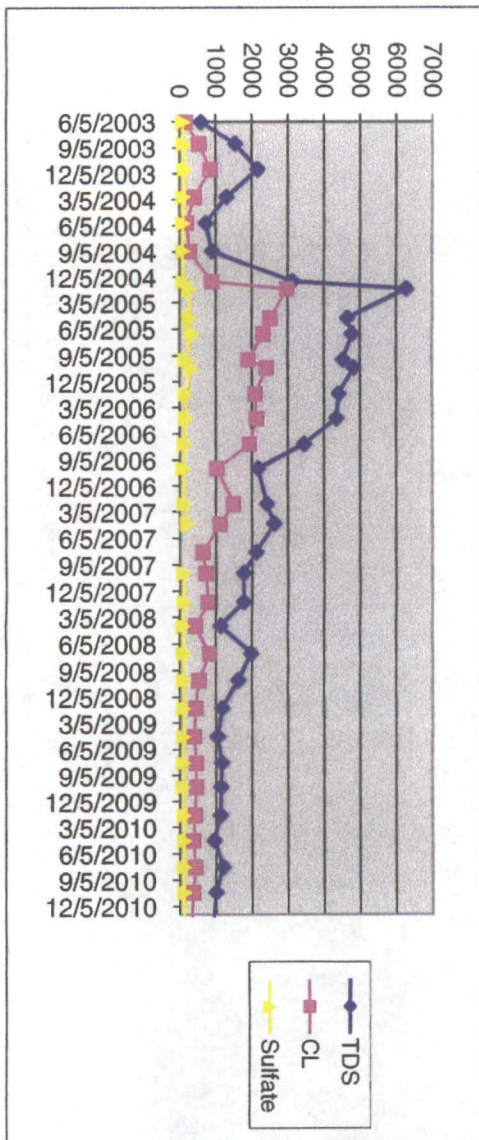


Table 2
Rice Operating Company
BD F-17
Lea County, New Mexico

[illegible]

Graph 2
 Rice Operating Company
 MW-2
 BD F-17
 Lea County, New Mexico

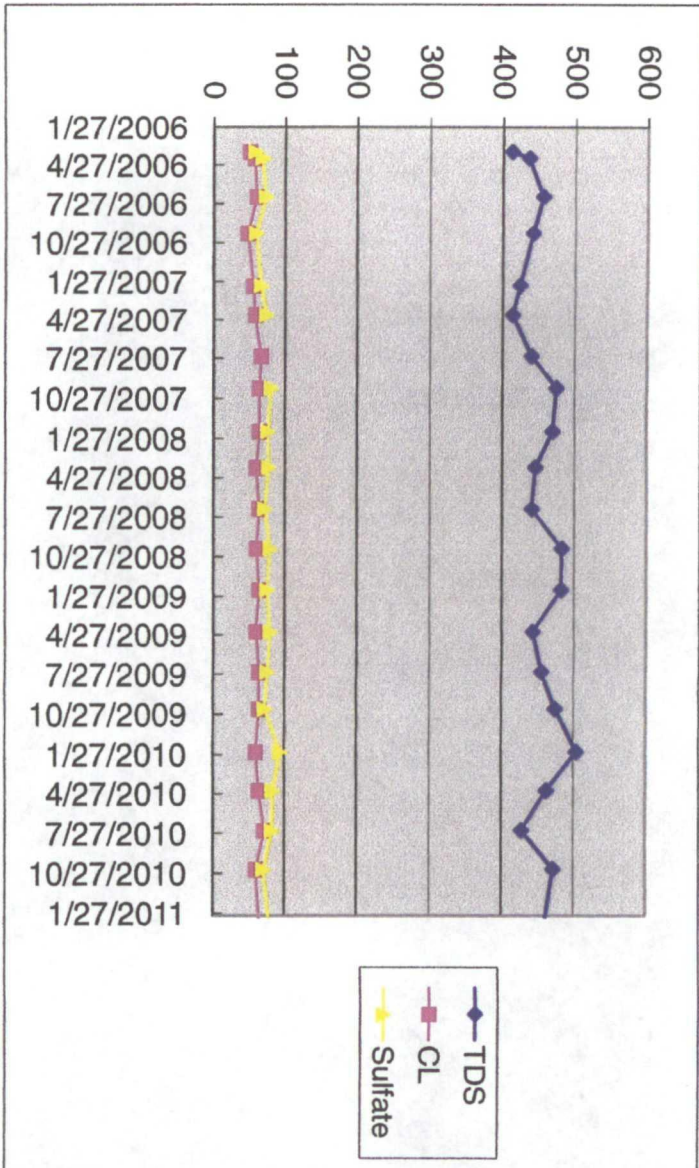


Table 3
Rice Operating Company
BD F-17
Lea County, New Mexico

[illegible]

Graph 3
 Rice Operating Company
 MW-3
 BD F-17
 Lea County, New Mexico

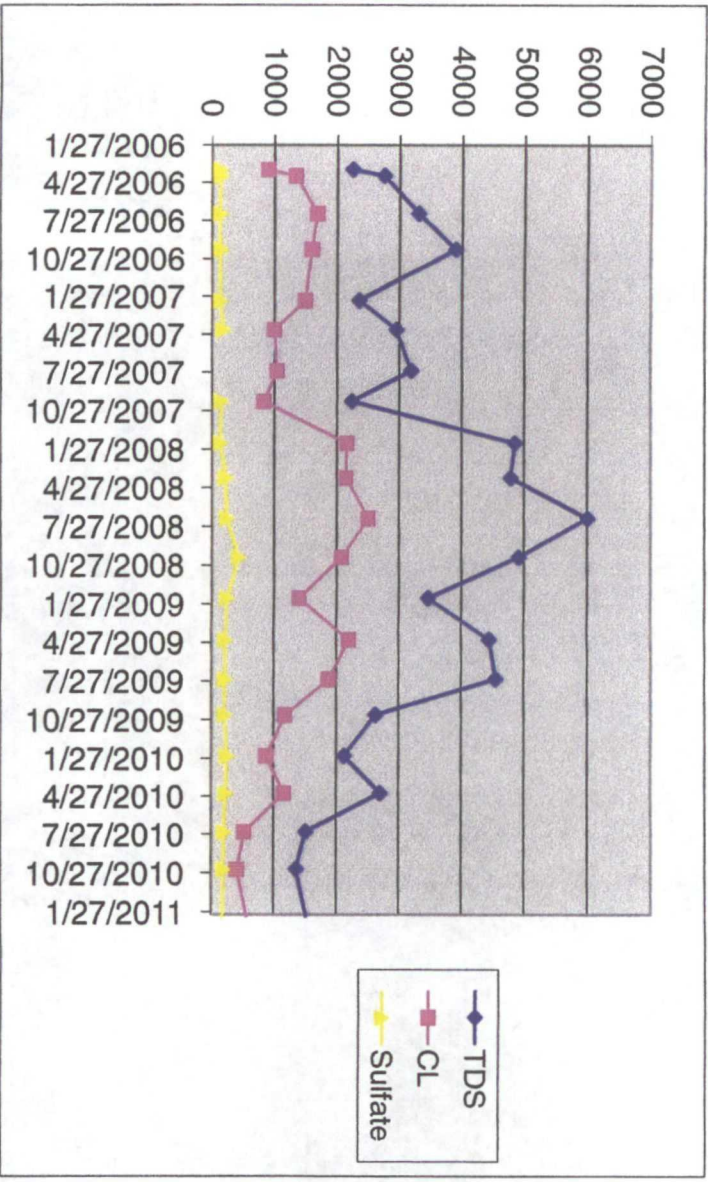
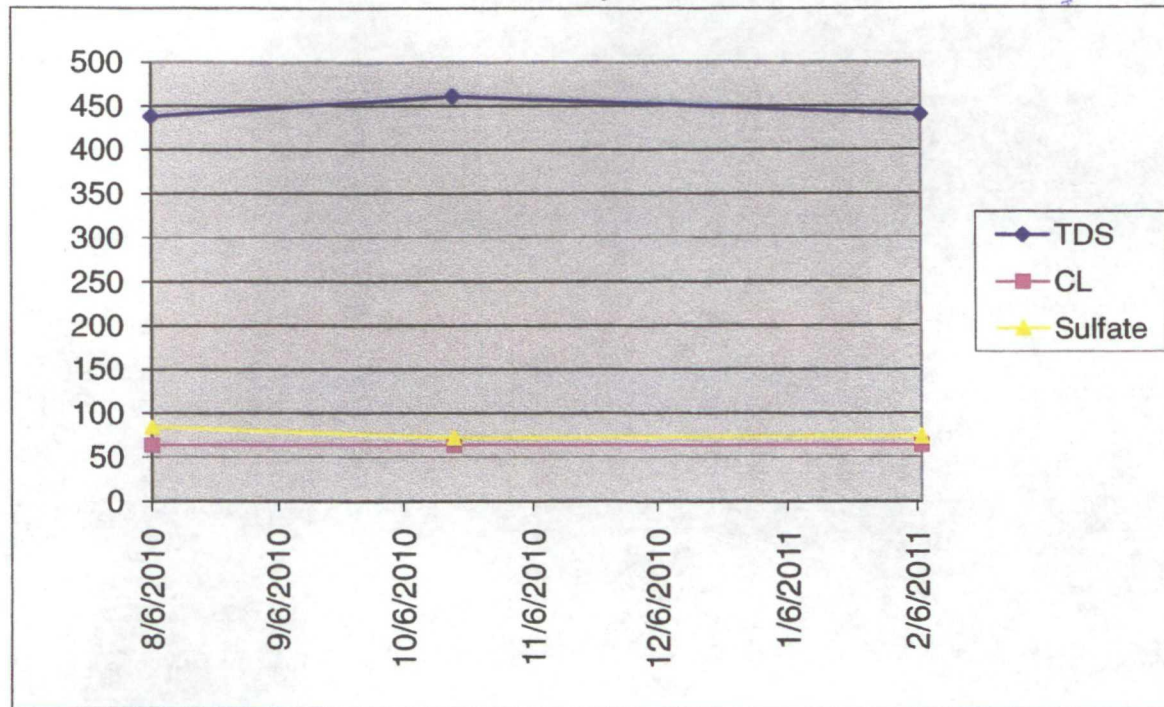


Table 4
Rice Operating Company
BD F-17
Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl mg/L	TDS mg/L	Benzene mg/L	Toluene mg/L	Ethyl Benzene mg/L	Total Xylenes mg/L	Sulfate mg/L	Comments
4	77.74	91.95	2.30	10.0	08/06/10	64	438	<0.001	<0.001	<0.001	<0.003	84	Sand to clear
4	77.76	91.95	2.30	10.0	10/18/10	64	461	<0.001	<0.001	<0.001	<0.003	71.9	Sand to clear
4	77.72	92.44	2.40	10.0	02/07/11	64	440	<0.001	<0.001	<0.001	<0.003	73.7	Sand to clear

Graph 4
Rice Operating Company
MW-4
BD F-17
Lea County, New Mexico



APPENDIX A

WELL COMPLETION DIAGRAM

Logger:	Lara Weinheimer		
Driller:	Harrison & Cooper, Inc. Drilling		
Consultant:	Tetra Tech		
Drilling Method:	Air rotary		
Start Date:	7/26/2010		
End Date:	7/26/2010		
Comments:		Located 584 ft north west of the former junction box site. DRAFTED BY: Lara Weinheimer TD = 90 ft GW = 75 ft	
		Project Name: BD jct. F-17 Well ID: MW-4 Location: UL/F sec. 17 T21S R37E Lat: N 32°28'58.644" County: LEA Long: N103°11'23.88" State: NM	

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Well Construction
5				NO SAMPLES TAKEN		concrete pad on surface
10						
15						
20						
25						
30						
35						
40						
45						
50						
55						
60						
65						
70						
75						
80						
85						
90						screen = 0.01"

APPENDIX B

LABORATORY DATA



October 01, 2010

Hack Conder
Rice Operating Company
112 W. Taylor
Hobbs, NM 88240

RE: BD JCT F-17

Enclosed are the results of analyses for samples received by the laboratory on 09/30/10 15:42.

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 Hydrocarbons

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

Cardinal Laboratories is accredited 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
Lab Director/Quality Manager

**Analytical Results For:**

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received: 09/30/2010
Reported: 10/01/2010
Project Name: BD JCT F-17
Project Number: NONE GIVEN
Project Location: BD JCT F-17

Sampling Date: 09/30/2010
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: BLENDED BACKFILL #2 (H020962-01)

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	10/01/2010	ND	416	104	400	3.77	
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	09/30/2010	ND	186	93.1	200	6.49	
DRO >C10-C28	<10.0	10.0	09/30/2010	ND	199	99.6	200	15.1	
Surrogate: 1-Chlorooctane	95.7 %	70-130							
Surrogate: 1-Chlorooctadecane	97.7 %	70-130							

Cardinal Laboratories

* = Accredited Analyte

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 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, 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.

Celey D. Keene, Lab Director/Quality Manager

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

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 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, 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.



Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Page 4 of 4

APPENDIX C

SITE PHOTOGRAPHS

BD Jct. F-17 (AP-47)
Unit F, Section 17, T-21-S, R-37-E



site prior to excavation, facing southwest



excavating, facing south



hauling off soil, facing



hauling in hay-soil mix, facing west



excavation completed, facing southwest



excavation padded with sand, facing southwest



plastic liner installed, facing east



padding on top of plastic liner, facing southwest



blending backfill, facing east



backfilling with hay-soil mix, facing southwest



seeding the site, facing southwest 10/5/2010



site completed, facing south

APPENDIX D REVEGETATION FORM



112 West Taylor
Hobbs, NM 88240
Phone: (575) 393-9174
Fax: (575) 393-0293

REVEGETATION FORM

1. General Information

Site name: BD Jct F-17						
U/L F	Section 17	Township 21S	Range 37E	County Lea	Latitude 32.28.54.96	Longitude 103.11.18.467
Contact Name: Hack Conder						
Email: hconder@riceswd.com						
Site size: 3731 square feet			Map detail of site attached ☐			
Additional information:						

2. Soils

**Do not rip caliche subsoils: caliche rocks brought to the surface by ripping shall be removed.*

Salvaged from site ☐	Bioremediated ☐	Imported ☒	Blended ☒	Depth (in):
Texture: blow sand		Describe soil & subsoil: fine grain sand		
Soil prep methods:	Rip ☐	Depth(in):	Disc ☒	Depth (in):
Date completed: 10/5/2010				

3. Bioremediation

Fertilizer ☐	Hay ☒	Other ☐
Type:	Peanut hay	Describe:
Lbs/acre:		

4. Seeding

**Attach seed bag tags to this form. Seed bag tags shall contain the site name and S-T-R.*

Custom seed mix ☒	Prescribed mix ☐	Seed mix name: 8 lbs lea county mix, 10 lbs rye	Seeding date: 9/16/2010
Broadcast ☒			
Method: spreader			
Soil conditions during seeding: Dry ☒ Damp ☐ Wet ☐			
Photos attached ☐	Observations:		

5. Certification

I hereby certify that the information in this form and attachments is true and complete to the best of my knowledge and belief.

Name: Jordan Woodfin	Title: Environmental Technician	Date: 10/5/2010
Signature:		