

AP - 008

ANNUAL MONITORING REPORT

YEAR(S):

2006



Wayne Price
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico
505 476-3490
Sent Certified Mail Return Receipt #7002 2410 0001 5812 9718

Subject:
Rice Operating Company Junction I-9 Annual Report

Dear Wayne:

Respectfully submitted on behalf of Rice Operating Company (ROC) is the Junction I-9 Annual Report. Upon your review of this report we request your approval of closure of this site. Based on sample results for the last eight quarters ROC is requesting closure of the Junction I-9 sampling program beginning with the receipt of this report to the NMOCD per the WQCC Title 20, Chapter 6, Part 2 standards.

If you have any questions or need additional information please contact me at (432) 687-5400 or Kristin Pope at (505) 393-9174.

Sincerely,

ARCADIS G&M, Inc.

Sharon E. Hall
Site Evaluation Department Manager

Copies:
Chris Williams, NMOCD Hobbs
Kristin Pope, ROC
File Copy
Report Copy

ARCADIS G&M, Inc.
1004 North Big Spring
Suite 300
Midland
Texas 79701
Tel 432 687 5400
Fax 432 687 5401
www.arcadis-us.com

ENVIRONMENTAL

Date:
13 October 2006

Contact:
Sharon E. Hall

Phone:
432 687-5400

Email:
shall@arcadis-us.com

Our ref:
MT000643.0001

Imagine the result

JUNCTION I-9

2006 Annual Report and Closure Report

Rice Operating Company
Hobbs, New Mexico

ARCADIS

Sharon E. Hall

Sharon E. Hall
Site Evaluation Department Manager

Junction I-9 2006 Annual
Report and Closure Report
Rice Operating Company
Hobbs, New Mexico

Prepared for:
Rice Operating Company

Prepared by:
ARCADIS G&M, Inc.
1004 N. Big Spring Street
Suite 300
Midland,
Texas 79701
Tel 432.687.5400
Fax 432.687.5401

Our Ref.:
MT000643.0001.00001

Date:
October 15, 2006

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Closure Report**

Rice Operating Company
Hobbs, New Mexico

1. Introduction

This 2006 Junction I-9 report includes the latest (4) quarters of groundwater monitoring results. The report summarizes the Stage 2 field abatement activities and includes historical groundwater monitoring results. Based on sample results for the last eight quarters ROC is requesting closure of the Junction I-9 sampling program beginning with the receipt of this report to the NMOCD per the WQCC Title 20, Chapter 6, Part 2 standards.

2. Site History

The subject site is a former pipeline connection point on the Rice Operating Company (ROC) Hobbs Salt Water Disposal System. The abandoned pipeline transported produced water from oil and gas leases to a permitted well for disposal by subsurface injection. The site is located in southwest Hobbs, New Mexico approximately 0.6 miles south of the intersection of Grimes Street and Stanolind Road (Section 9, T19S-R38E, Lea County) (Figure 1).

A pipeline leak was discovered and repaired at the subject site on June 5, 1998. Notification of an accidental release was submitted to the New Mexico Oil Conservation Division (NMOCD) District I Office located in Hobbs, New Mexico. A Stage I Abatement Plan was submitted to the NMOCD on January 19, 1999. Interim abatement site activities including assessment of impacts to soil and groundwater and excavation of impacted soil were conducted from August 24, 1998 to September 2, 1999. Recovery of phase-separated hydrocarbons (PSH) from groundwater has been conducted from January 18 to May 7, 1999. A total of four monitor wells, one recovery well and nine boreholes were installed at the subject site. A Stage I Abatement Plan report detailing the results of the Stage 1 Abatement investigation was submitted to the NMOCD on September 10, 1999 and is included in Appendix C.

A Stage 2 Abatement Plan Proposal was submitted to the NMOCD on January 10, 2000. Following requests for additional information from the NMOCD, three Revised Stage 2 Abatement Plan proposals were submitted. (December 13, 2000, March 31, 2001 and December 13, 2001). A final Stage 2 Abatement Plan Proposal revision was submitted by ROC on April 5, 2004 and approved by the NMOCD on June 4, 2004. Copies of the plan, revisions and NMOCD approvals are on file at the NMOCD office in Santa Fe. The approved Stage 2 Abatement Plan Proposal is as follows:

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- Sampling monitor wells 1, 3, 4 and the McNeil well quarterly for four quarters and analyzing for benzene, toluene, ethylbenzene and xylenes (BTEX), general quality and New Mexico Water Quality Control Commission (WQCC) metals. Based on sample results for four quarters, the sampling frequency will be reviewed and may be revised.
- Sampling will be discontinued when eight quarters of sample results indicate that BTEX concentrations are below WQCC Title 20, Chapter 6, Part 2 standards.
- Excavation of soils in the area with detectable hydrocarbons in groundwater until the soil associated with the PSH is removed. When groundwater is encountered, excavation will be discontinued just below that depth.
- Installation of a 12-15" compacted clay layer that meets or exceeds 95% of a Proctor Test ASTM-D-98 and permeability equal to or less than 1×10^{-7} cm/sec over the area excavated to groundwater. The liner will extend 10 feet in all directions beyond the excavated area.
- Following backfilling, installation of a 12-15" compacted clay layer that meets or exceeds 95% of a Proctor Test ASTM-D-98 and permeability equal to or less than 1×10^{-7} cm/sec over the entire excavated area at a depth of 6-7 feet below ground surface (bgs).
- Excavation of soils exceeding total petroleum hydrocarbon (TPH), BTEX, benzene and chloride concentrations of 100 milligrams per kilogram (mg/kg), 50 mg/kg, 10 mg/kg and 250 mg/kg, respectively.
- Backfilling of blended soils not exceeding TPH, BTEX, benzene and chloride concentrations of 100 mg/kg, 50 mg/kg, 10 mg/kg and 1,099 mg/kg, respectively.
- Grading of the site to prevent ponding of rainwater.

A Stage 2 Abatement Report was submitted to the NMOCD on July 14, 2004 and approved by the NMOCD on August 17, 2004. The NMOCD requested an annual report, in the same format as the Stage 2 Abatement Report, be submitted by October 15 each year until NMOCD approval is given for no further monitoring. The 2005

Annual Report was submitted to NMOCD on September 21, 2005. The Stage 2 Abatement Report approval is included in Appendix A.

3. Geology and Hydrogeology

The Ogallala Formation is the principal source of groundwater in the subject area. Depth to groundwater in Lea County ranges from approximately 12 to approximately 300 feet bgs. The Ogallala consists of predominantly coarse fluvial conglomerate and sandstone and fine-grained Eolian siltstone and clay. Where present in the subject area, the Ogallala unconformably overlies Triassic redbeds. The regional and site groundwater gradient is to the south/southeast.

Depth to groundwater at the subject site is approximately 36 feet bgs. Groundwater elevations measured in the monitor wells at the subject site are shown in Table 1.

**Table 1
GROUNDWATER ELEVATIONS
Junction I-9 Site
HOBBS, NEW MEXICO**

MONITORING WELL	TOP OF CASING (feet)*	DATE	DEPTH TO GROUNDWATER (feet)*	WATER ELEVATION (feet)*
MW-1	3595.37	01/12/99	31.75	3563.62
MW-1	3595.37	01/16/99	32.04	3563.33
MW-1	3595.37	08/31/99	29.03	3566.34
MW-1	3595.37	03/02/04	36.78	3558.59
MW-1	3595.37	09/02/04	34.91	3560.46
MW-1	3595.37	06/28/05	30.76	3564.61
MW-1	3595.37	09/02/05	32.24	3563.13
MW-1	3595.37	11/14/05	29.88	3565.49
MW-1	3595.37	02/13/06	32.88	3562.49
MW-1	3595.37	05/10/06	32.70	3562.67
MW-1	3595.37	08/16/06	34.89	3560.48
MW-2	3595.58	01/12/99	31.82	3563.76

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MONITORING WELL	TOP OF CASING (feet)*	DATE	DEPTH TO GROUNDWATER (feet)*	WATER ELEVATION (feet)*
MW-2	3595.58	01/16/99	32.04	3563.54
MW-2	3595.58	08/31/99	28.89	3566.69
MW-2	3595.58	03/02/04	Dry	-
MW-3	3595.62	01/12/99	30.58	3565.04
MW-3	3595.62	01/06/99	31.85	3563.77
MW-3	3595.62	08/31/99	26.24	3569.38
MW-3	3595.62	03/02/04	35.58	3560.04
MW-3	3595.62	09/02/04	33.20	3562.42
MW-3	3595.62	06/28/05	28.99	3566.63
MW-3	3595.62	09/02/05	30.41	3565.21
MW-3	3595.62	11/14/05	27.10	3568.52
MW-3	3595.62	02/13/06	31.33	3564.29
MW-3	3595.62	05/10/06	32.70	3562.92
MW-3	3595.62	08/16/06	33.52	3562.10
MW-4	3595.15	09/02/99	28.98	3566.17
MW-4	3595.15	03/02/04	36.80	3558.35
MW-4	3595.15	09/02/04	35.01	3560.14
MW-4	3595.15	06/28/05	30.88	3564.27
MW-4	3595.15	09/02/05	32.38	3562.77
MW-4	3595.15	11/14/05	30.18	3564.97
MW-4	3595.15	02/13/06	32.94	3562.21
MW-4	3595.15	05/10/06	34.18	3560.97
MW-4	3595.15	08/16/06	34.98	3560.17
McNeil Well	---	09/02/04	37.82	---
McNeil Well	---	06/28/05	34.02	---
McNeil Well	---	09/02/05	35.21	---
McNeil Well	---	11/14/05	39.20	---
McNeil Well	---	02/13/06	35.77	---
McNeil Well	---	05/10/06	36.98	---

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MONITORING WELL	TOP OF CASING (feet)*	DATE	DEPTH TO GROUNDWATER (feet)*	WATER ELEVATION (feet)*
McNeil Well	---	08/16/06	37.75	---

*Based on survey data provided by Rice Operating Company. Used surveyed benchmark = top of casing on MW-3.

4. Stage 2 Abatement Field Activities

Stage 2 Abatement field activities were conducted between September 15, 2000 and October 3, 2000 and between September 26, 2003 and February 4, 2004. Stage 2 Abatement field activities included sampling of three monitoring wells and an agricultural well, excavation of impacted soils, installation of an upper and lower liner and backfilling and grading of the site. All field activities were performed in accordance with the Stage 2 Abatement Plan Proposal and revisions as approved by the NMOCD.

4.1 Soil Excavation

Stage 2 excavation activities were performed at the site between September 15, 2000 and October 3, 2000 and between September 26, 2003 and February 4, 2004. Excavation activities were continued in the area where hydrocarbons were detected on the groundwater until the soil associated with the PSH was removed. Soil in this area was excavated to 30-32' bgs. When groundwater was encountered, excavation was discontinued just below that depth in order to maintain safe and practical excavation of soils. PSH was recovered with absorbent material where possible. Soil excavation continued until no visible staining of the soils occurred, and no photoionization detector (PID) detections were observed. Soil samples were collected to confirm that impacted soils had been removed and that TPH, BTEX, benzene and chloride concentrations did not exceed the concentrations as approved for the Stage 2 Abatement Plan. Confirmation sample results and PID readings are shown in Table 2. The area of excavation is shown in Figure 2.

A 12-15" compacted clay layer was installed according to NMOCD clay layer specifications (meet or exceed 95% of a Proctor Test ASTM-D-698 with permeability equal to or less than 1×10^{-7} cm/sec) over the area excavated to the groundwater interface in order to inhibit downward migration of constituents and to protect the exposed groundwater interface. Once the excavation was backfilled, an additional compacted clay layer was installed (to NMOCD specifications) approximately 6-7 feet

bgs over the entire excavation in order to inhibit downward migration of potential constituents in soils below the compacted clay layer. Liner design specifications were submitted to the OCD on March 30, 2001.

Approximately 11,000 loose cubic yards of impacted soils were transported to an NMOCD-approved facility for disposal during initial Stage 2 Abatement activities. All remaining excavated soils, between 70,000 and 80,000 cubic yards, were blended with overburden/replacement soils and returned to the excavation as backfill. TPH, BTEX, benzene and chloride concentrations in the blended backfill material did not exceed the concentrations as approved for the Stage 2 Abatement Plan.

Following excavation, the site was graded to prevent ponding of water and seeded with a blend of native vegetation. The Stage 2 Abatement report detailing the abatement activities is included in Appendix D.

4.2 Sampling of Monitor Wells

A total of four monitor wells and one recovery well were installed in the subject area. An additional existing well referred to as the McNeil well has been added to the monitor well sampling program. Monitor well MW-2 is dry and, therefore, is not included in the monitoring program. The recovery well was removed during excavation activities. Well locations are shown in Figure 2.

Groundwater samples were collected from MW-1, MW-2 and MW-3 on January 16, 1999 and analyzed for volatile organics (VOCs), semi-volatile organics (SVOCs), general chemistry and metals using USEPA Methods 8260, 8270C, 325.3, 4500, 150.1, 120.1, 375.4, 160.1, and 6010B.

MW-1 and MW-2 were resampled on July 7, 1999 to determine if BTEX concentrations were representative of downgradient aquifer conditions. The groundwater samples were submitted for analysis for BTEX using USEPA Method 8021B.

MW-4 was sampled on September 2, 1999 and analyzed for VOCs, SVOCs, general chemistry and metals using USEPA Methods 8260, 8270C, 325.3, 4500, 150.1, 120.1, 375.4, 160.1 and 6010B.

MW-1, MW-3, MW-4 and the McNeil well were sampled on March 2, 2004 and analyzed for VOCs, gasoline range organics, diesel range organics and total

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hydrocarbon, general chemistry and metals using USEPA Methods 8260B, 8015M, 310.2M, 340.1, 325.3, 4500, 150.1, 120.1, 375.4, 160.1 and 7470A and 6010B. Laboratory analyses for March 2, 2004 sampling event are in Appendix B of the Junction I-9, 2004 Annual Report. Groundwater analytical results are summarized in Table 3 of this report.

Benzene was detected in the samples collected from MW-1 and MW-2 on January 16, 1999 and July 7, 1999 at a concentration of 0.008 milligrams per liter (mg/L), 0.017 mg/L, 0.262 mg/L and 0.289 mg/L, respectively. Toluene was detected in the samples collected from MW-1 on July 7, 1999 at a concentration of 0.01 mg/L. Ethylbenzene was detected in the samples collected from MW-1 and MW-2 on January 16, 1999 and July 7, 1999 at a concentration of 0.032 mg/L / 0.007 mg/L and 0.286 mg/L / 0.061 mg/L, respectively. Xylenes were detected in the samples collected from MW-1 and MW-2 on January 16, 1999 and July 7, 1999 at a concentration of 0.012 mg/L / 0.012 mg/L and 0.131 mg/L / 0.008 mg/L, respectively. 1,2,4-trimethylbenzene was detected in the January 1999 sample collected from MW-1 at a concentration of 0.007 mg/L. No other analyzed organic compounds were detected.

As expected, naturally-occurring inorganic analytes (metals, chlorides, pH, sulfate, TDS, calcium, potassium, bicarbonate, manganese and sodium) were detected in the groundwater samples collected from MW-1, MW-2, MW-3 and MW-4. No evidence of unnatural contribution to groundwater quality is evident.

No hydrocarbons (TPH or BTEX) were detected in any of the wells during the March 2004 groundwater sampling event. Metals analysis indicates a decrease in metals concentrations since the July and September 1999 sampling events. Aluminum and lead were detected at concentrations in excess of WQCC standards; however, the concentrations of these compounds have decreased since the wells were last sampled. Boron, which had not previously been analyzed, was detected at a concentration in excess of the WQCC standard. Total dissolved solids and sodium were detected at concentrations above the WQCC standard, and chlorides were detected above the WQCC standard in one well, MW-3.

A quarterly groundwater sampling event was performed on September 2, 2004 following final approval of the Stage 2 Abatement workplan and Stage 2 Abatement report. No hydrocarbons were detected in any of the groundwater samples. Chloride concentrations were below New Mexico standard of 250 mg/L in all of the wells. Naturally occurring inorganic compounds including barium, iron and manganese were detected at concentrations in excess of WQCC standards.

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No free product is evidenced at the site. During excavation activities, the site was excavated to groundwater in the source area. No product was evidenced in the excavation.

Quarterly groundwater sampling for 2005 was performed on December 20, 2004, March 21, 2005, June 28, 2005 and September 2, 2005. Samples were collected from MW-1, MW-3, MW-4 and the McNeil well and analyzed for BTEX, chloride and WQCC metals using USEPA Methods 8021B, 300.0, 7470A and 6010B for all four sampling events. Additionally, major anions and cations were analyzed for the June and September 2005 samples using USEPA Methods 310.2M, 300.0 and 160.1. Groundwater analytical results are summarized in Table 3 of this report.

Benzene, toluene, ethylbenzene or Total xylenes (BTEX) were not detected in any of the wells during the four 2005 quarterly groundwater sampling events. Chloride concentrations remained below New Mexico's standard of 250 mg/L in all wells for each sampling event. Naturally occurring inorganic compounds including iron and manganese were detected at concentrations in excess of the WQCC standards. Iron was detected in MW-1 for June and September 2005 and in MW-3 for March and September 2005. Manganese was detected in MW-1 for June 2005 and in MW-3 for September 2005. Metals analysis indicates a decrease in metals concentrations since the July and September 1999 sampling. Aluminum was detected at a concentration in excess of the WQCC standards for MW-3 in September 2005 only. Boron was detected at concentrations in excess of the WQCC standard; however, the results have remained consistent with the September 2004 event. Total dissolved solids were detected at concentrations above the WQCC standard, but chlorides were below the WQCC standard in all wells for these four quarters.

Quarterly groundwater sampling for 2006 was performed on November 14, 2005, February 13, 2006, May 10, 2006 and August 16, 2006. Samples were collected from MW-1, MW-3, MW-4 and the McNeil well and analyzed for BTEX and chloride using USEPA Methods 8021B and 300.0 for all four sampling events. Additionally, major anions and cations were analyzed for the May and August 2006 samples using USEPA Methods 310.2M, 300.0 and 160.1. Laboratory analyses for the four quarterly sampling events are included in Appendix B.

Benzene, toluene, ethylbenzene or Total xylenes (BTEX) were not detected in any of the wells during the last four quarterly groundwater sampling events. Chloride concentrations remained below New Mexico's standard of 250 mg/L in all wells for each sampling event. Sulfate results were well below the WQCC standard in all wells.

Total dissolved solids were detected at concentrations just above and below the WQCC standard.

5. Conclusions

Based on sample results for the last eight quarters ROC is requesting closure of the Junction I-9 sampling program beginning with the receipt of this report to the NMOCD per the WQCC Title 20, Chapter 6, Part 2 standards.

Soils exceeding TPH, BTEX, benzene and chloride concentrations of 100 mg/kg, 50 mg/kg, 10 mg/kg and 250 mg/kg, respectively, have been excavated and two clay liners installed as described in this report. Backfill material (blended soils) concentrations did not exceed TPH, BTEX, benzene and chloride concentrations of 100 mg/kg, 50 mg/kg, 10 mg/kg and 1,099 mg/kg, respectively. The site has been graded to prevent ponding of rainwater.

No dissolved hydrocarbons (TPH or BTEX) were detected in any of the wells during the March 2004 groundwater sampling event. Metals analysis indicates a decrease in metals concentrations since the July and September 1999 sampling.

A quarterly groundwater sampling event was performed on September 2, 2004 following final approval of the Stage 2 Abatement workplan and Stage 2 Abatement report. No dissolved hydrocarbons were detected in any of the groundwater samples. Chloride concentrations were below New Mexico standard of 250 mg/L in all of the wells. Naturally occurring inorganic compounds including barium, iron and manganese were detected at concentrations in excess of WQCC standards.

No free product is evidenced at the site. During excavation activities the site was excavated to groundwater in the source area. No measurable product was evidenced in the excavation.

Four quarterly groundwater sampling events for 2005 were performed on December 20, 2004, March 21, 2005, June 28, 2005 and September 2, 2005 as compliance with the Stage 2 Abatement workplan. No dissolved hydrocarbons were detected in any of the groundwater samples. Chloride concentrations were below New Mexico standard of 250 mg/L in all of the wells for each sampling event. Naturally occurring inorganic compounds are showing a return to concentrations below the WQCC standards.

Four quarterly groundwater sampling events for 2006 were performed on November 14, 2005, February 13, 2006, May 10, 2006 and August 16, 2006 as part of ROC compliance with the Stage 2 Abatement workplan. No dissolved hydrocarbons were detected in any of the groundwater samples. Chloride concentrations were below New Mexico standard of 250 mg/L in all of the wells for each sampling event. Naturally occurring inorganic compounds are consistently showing a return to concentrations below the WQCC standards.

ROC has continued the groundwater sampling of Monitor Well-1, -3, -4 and the McNeil well for eight quarters since the 2004 Annual Report. The samples were analyzed for BTEX, general water quality and WQCC metals for the four quarters of 2005 monitoring and for BTEX and general water quality for the four quarters of 2006 monitoring. The sample results have demonstrated that BTEX and general water quality concentrations are below WQCC Title 20, Chapter 6, Part 2 standards for a minimum of eight quarters.

Per the NMOCD approved Stage 2 Abatement Plan, ROC is requesting closure of the Junction I-9 site upon receipt of this report by the NMOCD.

6. References

Groundwater Handbook, United States Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information; 1992.

Hydrology and Hydrochemistry of the Ogallala Aquifer, Southern High Plains, Texas Panhandle and Eastern New Mexico; Report Number 177; Bureau of Economic Geology; 1988.

Hydrogeochemistry and Water Resources of the Lower Dockum Group in the Texas Panhandle and Eastern New Mexico; Report Number 161; Bureau of Economic Geology; 1986.

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart I.

Junction I-9 Release Site, Stage 1 Abatement Report (Site Assessment Investigation); ARCADIS Geraghty and Miller; September 10, 1999

Junction I-9 Stage 2 Abatement Report; ARCADIS Geraghty and Miller; July 2004

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Table 2
Soil Analytical Results

Date	Lab Number	Comment	Lab GRO	Lab DRO	Lab CL	Field PID	Field CI	Benzene	Toluene	Ethyl Benzene	Total Xylenes
2/5/2004	H8435	Surface 5pt Comp	<10	<10	144			N/A	N/A	N/A	N/A
1/29/2004	H8420	1st 5' lift after clay liner @ 8' S. 1/2	<10	<10	112	NW 4.0	104	N/A	N/A	N/A	N/A
"						NE 4.8		N/A	N/A	N/A	N/A
"						Center 3.6		N/A	N/A	N/A	N/A
"						SW 6.0		N/A	N/A	N/A	N/A
"						SE 5.3		N/A	N/A	N/A	N/A
1/26/2004	H8407	1st 5' lift after clay liner @ 8' N. 1/2	<10	<10	176	3.4	183	N/A	N/A	N/A	N/A
"						2.9		N/A	N/A	N/A	N/A
"						2.7		N/A	N/A	N/A	N/A
"						2.2		N/A	N/A	N/A	N/A
"						2.3		N/A	N/A	N/A	N/A
1/12/2004	H8347	N 1/2 4th 5' lift	<10	<10	128	NE 3.3	126	N/A	N/A	N/A	N/A
"						NW 6.9		N/A	N/A	N/A	N/A
"						Center 3.6		N/A	N/A	N/A	N/A
"						SE 4.8		N/A	N/A	N/A	N/A
"						SW 2.0		N/A	N/A	N/A	N/A
1/6/2004	H8331	S 1/2 4th 5' lift	<10	<10	96	SE 13.8	105	N/A	N/A	N/A	N/A
"						NE 1.4		N/A	N/A	N/A	N/A
"						Center 4.5		N/A	N/A	N/A	N/A
"						NW 3.5		N/A	N/A	N/A	N/A
"						SW 9.3		N/A	N/A	N/A	N/A
12/30/2003	H8307	N. 3rd 5' lift comp	<10	<10	80	SE 5.3	129	N/A	N/A	N/A	N/A
"						NE 5.8		N/A	N/A	N/A	N/A
"						Center 10.3		N/A	N/A	N/A	N/A
"						SW 15.0		N/A	N/A	N/A	N/A
"						NW 3.3		N/A	N/A	N/A	N/A
12/23/2003	H8289	S. 3rd 5' lift by MW #1	<10	<10	80	NW 3.4	101	N/A	N/A	N/A	N/A
"						NE 3.3		N/A	N/A	N/A	N/A
"						Center 10.9		N/A	N/A	N/A	N/A
"						SE 3.6		N/A	N/A	N/A	N/A
"						SW 37.2		N/A	N/A	N/A	N/A
12/17/2003	H8265	S. 2nd 5' lift by MW #1	<10	34.2	96	NE 4.8	156	N/A	N/A	N/A	N/A

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Table 2
Soil Analytical Results

Date	Lab Number	Comment	Lab GRO	Lab DRO	Lab CL	Field PID	Field CI	Benzene	Toluene	Ethyl Benzene	Total Xylenes
"						NW 5.2		N/A	N/A	N/A	N/A
"						Center 9.3		N/A	N/A	N/A	N/A
"						SE 6.3		N/A	N/A	N/A	N/A
"						SW 3.0		N/A	N/A	N/A	N/A
12/11/2003	H8246	S. 1st 5' lift 4th clay liner	<10	<10	128	3.2	101	N/A	N/A	N/A	N/A
"						3.5		N/A	N/A	N/A	N/A
"						3.8		N/A	N/A	N/A	N/A
"						3.7		N/A	N/A	N/A	N/A
"						1.9		N/A	N/A	N/A	N/A
12/9/2003	H8236	2nd lift 3rd clay liner	<10	<10	176	2.1	82	N/A	N/A	N/A	N/A
12/5/2003	H8230-1	S. wall 2pt comp	<10	<10	144			N/A	N/A	N/A	N/A
"	H8230-2	S. end @ GW @ 36'	<10	<10	80			N/A	N/A	N/A	N/A
"	H8230-3	5pt comp S. end bttm	<10	<10	96			N/A	N/A	N/A	N/A
12/4/2003	H8223-1	E. wall 5pt comp N. 1/2	<10	<10	80	1.1	115	N/A	N/A	N/A	N/A
"						0.5		N/A	N/A	N/A	N/A
"						0.4		N/A	N/A	N/A	N/A
"						0.6		N/A	N/A	N/A	N/A
"						1.3		N/A	N/A	N/A	N/A
12/4/2003	H8223-2	E. wall 5pt comp S. 1/2	<10	<10	112	4.4	95	N/A	N/A	N/A	N/A
"						0.5		N/A	N/A	N/A	N/A
"						1.1		N/A	N/A	N/A	N/A
"						0.5		N/A	N/A	N/A	N/A
"						1.3		N/A	N/A	N/A	N/A
12/2/2003	H8214	5pt comp 3rd liner 1st 5' lift	<10	<10	160	34.5	180	N/A	N/A	N/A	N/A
11/21/2003	H8202-1	4pt comp @ GW 36'	<10	<10	112	1.7	105	N/A	N/A	N/A	N/A
"	H8202-2	5pt base comp @ 30'	<10	<10	144	1.8	177	N/A	N/A	N/A	N/A
11/6/2003	H8148	GW backfill S. end	<10	<10	96			N/A	N/A	N/A	N/A
10/31/2003	H8133-1	S. wall comp E. end	<10	<10	32	2.5	110	N/A	N/A	N/A	N/A
"	H8133-2	S. wall comp W. end	<10	<10	16	2.6	105	N/A	N/A	N/A	N/A
10/30/2003	H8129	S. @ GW 36'	<10	<10	48	6.1	203.44	N/A	N/A	N/A	N/A
10/24/2003	H8113	Water table backfill	<10	<10	160	0.2		N/A	N/A	N/A	N/A
10/21/2003	H8102-1	7pt comp @ GW 36'	<10	28.8	80			<0.005	<0.005	<0.005	<0.015

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Table 2
Soil Analytical Results

Date	Lab Number	Comment	Lab GRO	Lab DRO	Lab CL	Field PID	Field CI	Benzene	Toluene	Ethyl Benzene	Total Xylenes
"	H8102-2	W. wall S. 1/2 5pt comp	<10	16.7	96			<0.005	<0.005	<0.005	<0.015
"	H8102-3	W. wall N. 1/2 5pt comp	<10	<10	64			<0.005	<0.005	<0.005	<0.015
10/1/2003	H8053-1	Btm #1	<10	<10	64	1.3	200	<0.005	<0.005	<0.005	<0.015
"	H8053-2	Btm #2	<10	<10	64	1	234	<0.005	<0.005	<0.005	<0.015
"	H8053-3	Btm #3	<10	<10	253	2.5	366	<0.005	<0.005	<0.005	<0.015
"	H8053-4	Btm #4	<10	<10	448	2.3	680	<0.005	<0.005	<0.005	<0.015
"	H8053-5	Btm #5	<10	<10	112	0.7	231	<0.005	<0.005	<0.005	<0.015
	Lab ID	ELOT									
11/26/2003	0308006-01	N. wall E. 1/2 comp	<10	<10	<20			N/A	N/A	N/A	N/A
"	0308006-02	N. wall W. 1/2 comp	<10	<10	21.3			N/A	N/A	N/A	N/A
10/6/2003	0307653-01	1st lift #1	<10	26.4	35.4	1.3	185.55	N/A	N/A	N/A	N/A
"	0307653-02	1st lift #2	<10	<10	53.2	2	147.46	N/A	N/A	N/A	N/A
"	0307653-03	1st lift #3	<10	<10	35.4	0.7	360.89	N/A	N/A	N/A	N/A
"	0307653-04	1st lift #4	<10	12.1	35.4	1.5	153.76	N/A	N/A	N/A	N/A
"	0307653-05	1st lift #5	<10	18.9	35.4	1.7	154.46	N/A	N/A	N/A	N/A
"	0307653-06	W. wall bttm #6	<10	11.6	106	18.1	176.45	N/A	N/A	N/A	N/A
"	0307653-07	W. wall bttm #7	<10	<10	<20	1.6	162.35	N/A	N/A	N/A	N/A
"	0307653-08	W. wall bttm #8	<10	<10	<20	6.6	114.96	N/A	N/A	N/A	N/A
"	0307653-09	W. wall bttm #9	71.4	401	1770	96	2044.36	N/A	N/A	N/A	N/A

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name	MW-1												MW-2		MW-3											
Date Sampled	1/16/99	7/7/99	3/2/04	9/2/04	12/20/04	3/21/05	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	1/16/99	7/7/99	1/16/99	3/2/04	9/2/04	12/20/04	3/21/05	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	
Compound Name	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
VOCs																										
Benzene	0.008	0.262	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.017	0.289	ND	ND	J(0.00067	ND	ND	ND	ND	ND	ND	ND	ND	
Bromobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bromochloromethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bromodichloromethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bromoform	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bromomethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
n-butylbenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
sec-butylbenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
tert-butylbenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbon tetrachloride	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chlorodibromomethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chloroethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chloroform	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chloromethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Chlorotoluene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chlorotoluene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dibromo-3-	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dibromoethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibromomethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dichlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,3-Dichlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,4-Dichlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dichlorodifluoromethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1-Dichloroethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dichloroethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1-Dichloroethene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
cis-1,2-dichloroethene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
trans-1,2-dichloroethene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dichloropropane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,3-Dichloropropane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,2-Dichloropropane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1-Dichloropropene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	0.032	0.286	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.007	0.061	ND	ND	J(0.00041	ND	ND	ND	ND	ND	ND	ND	ND	
Hexachlorobutadiene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Isopropylbenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
p-isopropyltoluene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Methylene chloride	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
n-propylbenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Styrene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1,1,2-	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1,2,2-	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Tetrachloroethene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Toluene	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,3-Trichlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,4-Trichlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1,1-Trichloroethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,1,2-Trichloroethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Trichloroethene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Trichlorofluoromethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3-Trichloropropane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,4-Trimethylbenzene	0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA										

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name	Date Sampled	MW-1												MW-2		MW-3											
Compound Name		1/16/99	7/7/99	3/2/04	9/2/04	12/20/04	3/21/06	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	1/16/99	7/7/99	1/16/99	3/2/04	9/2/04	12/20/04	3/21/05	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	
(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
SVOCs																											
Acenaphthene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aniline	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(b)fluoranthene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzoic acid	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(g,h,i)perylene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzyl alcohol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Bromophenylphenyl	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Butylbenzylphthalate	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
di-n-butyl phthalate	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbazole	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chloroaniline	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
bis(2-	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
bis(2-chloroethyl)ether	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
bis(2-	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chloro-3-methylphenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Chloronaphthalene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Chlorophenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chlorophenylphenyl	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibenz(a,h)anthracene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibenzofuran	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dichlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,3-Dichlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,4-Dichlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3,3-Dichlorobenzidine	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dichlorophenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diethylphthalate	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dimethylphenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dimethyl phthalate	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4,6-Dinitro-2-	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dinitrophenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dinitrotoluene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,6-Dinitrotoluene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Diphenylhydrazine	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
bis(2-	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluorene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexachlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexachlorobutadiene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexachloroethane	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hexachlorocycloheptadie	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Isophorone	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylnaphthalene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylphenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Methylphenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitroaniline	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3-Nitroaniline	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Nitroaniline	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nitrobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitrophenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Nitrophenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-nitrosodiphenylamine	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-nitroso-di-n-	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Di-n-octyl phthalate	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pentachlorophenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pyrene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pyridine	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,4-Trichlorobenzene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4,5-Trichlorophenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4,6-Trichlorophenol	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA</			

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name Date Sampled	MW-1												MW-2		MW-3											
Compound Name	1/16/99 (mg/L)	7/7/99 (mg/L)	3/2/04 (mg/L)	9/2/04 (mg/L)	12/20/04 (mg/L)	3/21/05 (mg/L)	6/28/05 (mg/L)	9/2/05 (mg/L)	11/14/05 (mg/L)	2/13/06 (mg/L)	5/10/06 (mg/L)	8/16/06 (mg/L)	1/16/99 (mg/L)	7/7/99 (mg/L)	1/16/99 (mg/L)	3/2/04 (mg/L)	9/2/04 (mg/L)	12/20/04 (mg/L)	3/21/05 (mg/L)	6/28/05 (mg/L)	9/2/05 (mg/L)	11/14/05 (mg/L)	2/13/06 (mg/L)	5/10/06 (mg/L)	8/16/06 (mg/L)	
General Chemistry																										
Resistivity	0.74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.58	NA	0.53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Specific Gravity	0.982	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.985	NA	0.996	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chloride	128	NA	195	186	70.9	128	145	73	71.9	118	143	25.4	230	NA	195	319	142	160	131	148	146	99	127	140	123	
Carbonate (CaCO ₃)	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bicarbonate (CaCO ₃)	332	NA	478	NA	NA	NA	NA	NA	NA	NA	NA	NA	322	NA	370	380	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hydroxide Alkalinity	NA	NA	ND	NA	NA	NA	393	416	466	372	441	568	NA	NA	NA	ND	NA	NA	NA	NA	372	354	396	386	386	452
pH	7.29	NA	7.22	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.51	NA	7.51	6.99	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Sulfate	318	NA	440	NA	NA	NA	516	309	214	291	300	243	372	NA	483	499	NA	NA	NA	NA	344	321	208	280	274	269
Total Dissolved Solids	890	NA	1720	NA	NA	NA	1310	1160	1080	1100	1160	984	1190	NA	1340	1320	NA	NA	NA	NA	1170	1260	1030	1130	1180	1110
Calcium	727	NA	72.8	NA	NA	NA	94.9	121	73.6	144	139	132	578	NA	1255	94.4	NA	NA	NA	NA	70.9	129	38.8	122	89.5	91.2
Potassium	3	NA	4.45	NA	NA	NA	5.23	3.48	4.95	3.92	2.37	1.57	30	NA	8	2.7	NA	NA	NA	NA	3.66	2.7	3.52	2.92	1.77	1.83
Sodium	144	NA	244	NA	NA	NA	213	131	224	222	264	126	171	NA	310	200	NA	NA	NA	NA	263	301	251	228	253	208
Specific Conductance	NA	NA	1870	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1740	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoride	NA	NA	1.57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.91	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nitrate as N	NA	NA	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Metals																										
Aluminum	12.3	NA	7	NA	0.220	0.295	0.611	1.2	NA	NA	NA	NA	16.5	NA	32.7	15.7	NA	0.263	3.83	0.730	6.160	NA	NA	NA	NA	
Arsenic	0.019	NA	ND	0.0213	0.0117	0.0160	ND	0.0251	NA	NA	NA	NA	0.025	NA	0.028	0.0127	0.0413	0.0190	0.0245	0.0265	0.0291	NA	NA	NA	NA	
Barium	0.87	NA	0.446	0.903	0.101	0.0736	0.0834	0.106	NA	NA	NA	NA	0.97	NA	3.91	1.87	4.35	0.0442	0.359	0.112	0.595	NA	NA	NA	NA	
Boron	NA	NA	1.38	NA	0.891	1.02	1.05	0.934	NA	NA	NA	NA	NA	NA	NA	0.999	NA	1.29	1.17	1.02	1.05	NA	NA	NA	NA	
Cadmium	ND	NA	ND	0.0024	ND	0.00170	0.00140	0.00120	NA	NA	NA	NA	ND	NA	ND	ND	0.0031	ND	0.00530	ND	0.002	NA	NA	NA	NA	
Cobalt	ND	NA	J[0.0008]	NA	0.00540	0.00440	0.0309	0.0128	NA	NA	NA	NA	ND	NA	ND	0.0047	NA	0.00880	ND	ND	0.0057	NA	NA	NA	NA	
Chromium	ND	NA	J[0.0024]	0.0193	ND	ND	ND	ND	NA	NA	NA	NA	0.02	NA	0.03	0.0139	0.0484	ND	ND	ND	0.0052	NA	NA	NA	NA	
Copper	0.02	NA	0.0044	0.0538	0.0104	0.0725	0.00910	0.01870	NA	NA	NA	NA	0.02	NA	0.02	ND	0.0183	0.00700	J[0.00170]	ND	0.0126	NA	NA	NA	NA	
Iron	9.34	NA	5.58	9.72	0.361	0.326	1.41	1.56	NA	NA	NA	NA	11.6	NA	26.4	13.8	25.4	0.451	2.86	0.353	5.03	NA	NA	NA	NA	
Lead	0.005	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	0.007	NA	0.013	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	
Mercury	ND	NA	ND	ND	NA	NA	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	NA	NA	ND	0.00112	NA	NA	NA	NA	
Magnesium	NA	NA	28.1	NA	NA	NA	38.1	39.7	35.1	32.6	33.2	33.8	NA	NA	NA	38.8	NA	NA	NA	27.5	30.4	28.6	28.6	28.6	29.2	
Manganese	0.214	NA	0.0741	0.234	0.0361	NA	0.312	0.172	NA	NA	NA	NA	0.288	NA	0.535	0.458	0.775	0.0669	NA	0.131	0.222	NA	NA	NA	NA	
Molybdenum	ND	NA	ND	NA	0.00300	ND	ND	0.0024	NA	NA	NA	NA	ND	NA	0.03	ND	NA	0.00280	ND	ND	0.0053	NA	NA	NA	NA	
Nickel	0.02	NA	ND	NA	0.0210	J[0.00540]	0.0134	0.0204	NA	NA	NA	NA	ND	NA	0.05	ND	NA	0.0420	ND	ND	0.0136	NA	NA	NA	NA	
Selenium	ND	NA	ND	ND	ND	ND	ND	0.0056	NA	NA	NA	NA	ND	NA	ND	ND	ND	0.0338	0.0174	0.0450	0.0175	NA	NA	NA	NA	
Silver	ND	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	
Zinc	0.05	NA	0.098	0.0533	0.00390	0.0141	0.0137	0.0414	NA	NA	NA	NA	0.04	NA	0.04	0.0342	0.186	0.00450	0.00990	0.00470	0.03830	NA	NA	NA	NA	

All results are reported in
milligrams per liter
(mg/L).
NA - Not analyzed
ND - Analyte Not
detected at or above the
reporting limit.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Weil Name	MW-4											McNeil Well										B-3	B-4
Date Sampled	9/2/99	3/2/04	9/2/04	12/20/04	3/21/05	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	3/2/04	9/2/04	12/20/04	3/21/05	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	10/21/98	10/21/98
Compound Name	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
VOCs																							
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.2	0.618
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorodibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.31	0.182
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			

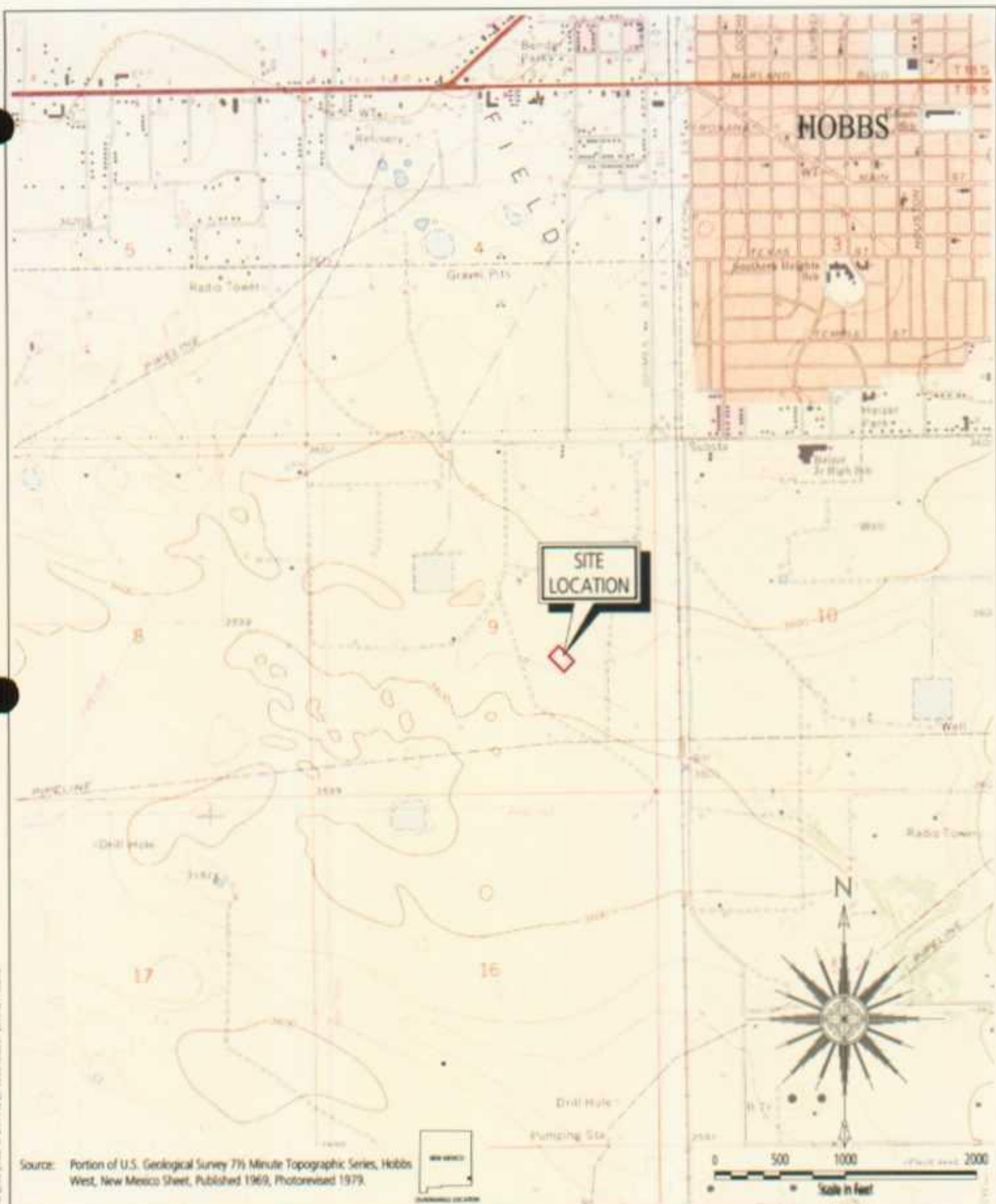
TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name	MW-4											McNeil Well											B-3	B-4
Date Sampled	9/2/99	3/2/04	9/2/04	12/20/04	3/21/05	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	3/2/04	9/2/04	12/20/04	3/21/05	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	10/21/98	10/21/98	
Compound Name	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
SVOcs																								
Acenaphthene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(b)fluoranthene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzoic acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(g,h,i)perylene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Bromophenylphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Butylbenzylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
bis(2-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
bis(2-chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
bis(2-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Chlorophenylphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibenz(a,h)anthracene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3,3-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diethylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4,6-Dinitro-2-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2-Diphenylhydrazine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name	MW-4											McNeil Well											B-3	B-4
Date Sampled	9/2/99	3/2/04	9/2/04	12/20/04	3/21/05	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	3/2/04	9/2/04	12/20/04	3/21/06	6/28/05	9/2/05	11/14/05	2/13/06	5/10/06	8/16/06	10/21/98	10/21/98	
Compound Name	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
General Chemistry																								
Resistivity	0.0009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Specific Gravity	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chloride	100	164	160	142	154	129	129	87.7	117	123	107	81.5	93.1	93.1	84.6	89.3	76.8	95.9	121	136	136	230	2400	
Carbonate (CaCO ₃)	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bicarbonate (CaCO ₃)	220	264	NA	NA	NA	NA	NA	NA	NA	NA	NA	185	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hydroxide Alkalinity	NA	ND	NA	NA	NA	348	355	270	345	350	392	ND	NA	NA	NA	192	192	160	152	160	170	NA	NA	
pH	NA	7.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Sulfate	180	367	NA	NA	NA	290	239	189	281	284	294	69.2	NA	NA	NA	67.4	47.3	191	251	275	336	NA	NA	
Total Dissolved Solids	770	1040	NA	NA	NA	991	1050	927	952	1060	1120	468	NA	NA	NA	467	502	730	798	888	930	1710	5460	
Calcium	93	100	NA	NA	NA	141	138	70.7	147	155	150	25.9	NA	NA	NA	24.5	28.9	116	103	117	124	NA	NA	
Potassium	2.4	1.85	NA	NA	NA	2.78	2.18	3.38	2.22	1.28	1.15	2.95	NA	NA	NA	3.92	3.34	4.01	5.09	1.96	3.1	NA	NA	
Sodium	124	129	NA	NA	NA	157	148	169	136	167	165	104	NA	NA	NA	115	136	128	120	119	129	NA	NA	
Specific Conductance	NA	1380	NA	NA	NA	NA	NA	NA	NA	NA	NA	724	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoride	NA	1.89	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nitrate as N	NA	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Metals																								
Aluminum	3.1	1.14	NA	0.588	0.675	0.489	1.03	NA	NA	NA	NA	0.0491	NA	ND	0.0208	0.0547	0.0832	NA	NA	NA	NA	NA	NA	
Arsenic	0.03	ND	ND	0.0134	0.0166	ND	0.0105	NA	NA	NA	NA	0.0467	0.0622	0.0645	0.645	0.0593	0.0741	NA	NA	NA	NA	NA	NA	
Barium	0.11	0.0932	0.128	0.101	0.0662	0.0809	0.0995	NA	NA	NA	NA	0.0543	0.0587	0.0560	0.0539	0.0576	0.0627	NA	NA	NA	NA	NA	NA	
Boron	NA	0.592	NA	0.740	0.869	0.684	0.765	NA	NA	NA	NA	0.127	NA	0.162	0.105	0.148	0.17	NA	NA	NA	NA	NA	NA	
Cadmium	ND	0.0134	ND	0.00150	0.00310	0.00150	0.00130	NA	NA	NA	NA	ND	0.0011	0.00100	0.00120	0.00130	ND	NA	NA	NA	NA	NA	NA	
Cobalt	ND	ND	NA	0.00470	ND	0.00240	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	J[0.00090]	NA	NA	NA	NA	NA	NA	
Chromium	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	J[0.00350]	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	
Copper	0.03	ND	0.0084	0.00680	ND	0.00230	0.00840	NA	NA	NA	NA	ND	0.0117	0.00820	ND	0.00320	ND	NA	NA	NA	NA	NA	NA	
Iron	2.4	1.06	1.53	0.375	0.439	0.219	0.679	NA	NA	NA	NA	0.0609	0.0485	0.00740	0.0234	0.0156	J[0.00110]	NA	NA	NA	NA	NA	NA	
Lead	0.008	ND	ND	ND	ND	ND	J[0.0107]	NA	NA	NA	NA	ND	ND	ND	J[0.00690]	ND	ND	NA	NA	NA	NA	NA	NA	
Mercury	ND	ND	ND	NA	NA	ND	0.00112	NA	NA	NA	NA	ND	0.00202	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	
Magnesium	NA	31.2	NA	NA	NA	33.4	34.8	37.4	32	33.3	36.2	3.93	NA	NA	NA	3.48	4.91	18.4	17.5	19.8	20.6	NA	NA	
Manganese	0.03	0.0524	0.0642	0.0866	NA	0.0399	0.0662	NA	NA	NA	NA	0.0221	0.0181	0.00110	NA	ND	0.0047	NA	NA	NA	NA	NA	NA	
Molybdenum	0.02	ND	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	J[0.00180]	NA	NA	NA	NA	NA	NA	
Nickel	0.1	ND	NA	0.0141	ND	ND	0.006	NA	NA	NA	NA	ND	NA	0.0450	ND	ND	J[0.00140]	NA	NA	NA	NA	NA	NA	
Selenium	0.02	ND	ND	ND	ND	0.0118	0.0132	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	
Silver	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	J[0.00240]	ND	ND	NA	NA	NA	NA	NA	NA	
Zinc	0.04	0.0863	0.0547	0.0318	0.00330	0.0299	0.0324	NA	NA	NA	NA	0.0331	0.0857	0.0270	0.0249	0.0267	0.028	NA	NA	NA	NA	NA	NA	

All results are reported in
milligrams per liter
(mg/L.)
NA - Not analyzed
ND - Analyte Not
detected at or above the
reporting limit.



Area Manager A. Schwab	 1004 North Big Spring Street Suite 300 Midland, TX 79701-3383 Tel: 432-687-5400 Fax: 432-687-5401 www.arcadis-us.com
Project Manager S. Hall	
Task Manager K. Lowrie	
Technical Review D. Glenn	

Rice Operating Company
Junction I-8 2005 Annual Report

Site Location Map

Lea County, New Mexico

Project Number
MT000643.0001

Drawing Title
25 September 2006

Figure

1



Sources: Compiled from field sketch with measurements provided by client. All distances are approximate. Arcadis Geraghty & Miller does not warrant the accuracy of this sketch.

NEW MEXICO

STUDY LOCATION

Extent and Depth of Excavation and Monitor Well Locations

Lea County, New Mexico

Project Number
MT000643.00001

Drawing Date
25 September 2006

Figure 1

2



1004 North Big Spring Street
Suite 300
Midland, TX 79701-3383
Tel: 432-687-5400 Fax: 432-687-5401
www.brcads-us.com

Area Manager	A. Schmidt
Project Manager	S. Hall
Task Manager	K. Lorenz
Technical Review	K. Lorenz

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ARCADIS

Appendix A

Stage 2 Abatement Report Approval

Hall, Sharon E.

From: Price, Wayne [WPrice@state.nm.us]
Sent: Tuesday, August 17, 2004 4:00 PM
To: Carolyn Doran Haynes (E-mail)
Cc: Hall, Sharon E.; Sheeley, Paul; Johnson, Larry
Subject: Rice I-9 AP#8

The OCD is in receipt of the Stage 2 letter and Abatement Report dated July 14, 2004. OCD hereby approves of the closure activities of the excavated area. In addition, OCD approves of the long term groundwater monitoring plan. Please submit an annual report due on October 15 of each year. The report will follow the same outline as the Stage 2 Abatement report. Please plot constituents of concern and include conclusions and recommendations.

Please be advised that NMOCD approval of this plan does not relieve (Rice Operating Company) of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (Rice Operating Company) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Sincerely:

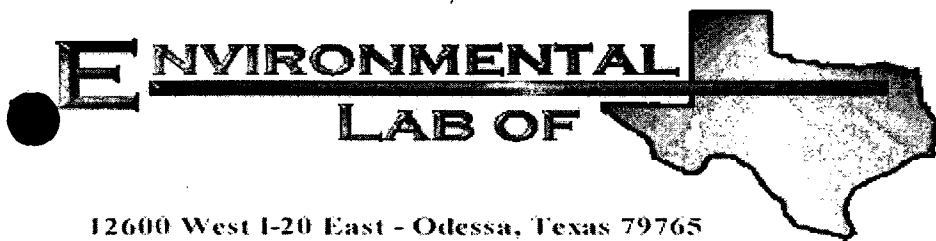
Wayne Price
New Mexico Oil Conservation Division
220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

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ARCADIS

Appendix B

Groundwater Analytical Results
November 2005 - August 2006



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris-Pope

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: Hobbs I-9 SWD

Project Number: None Given

Location: Lea County

Lab Order Number: 5K16003

Report Date: 11/29/05

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
11/29/05 16:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well #1	5K16003-01	Water	11/14/05 15:40	11/14/05 15:40
Monitor Well #3	5K16003-02	Water	11/14/05 14:10	11/14/05 15:40
Monitor Well #4	5K16003-03	Water	11/14/05 10:15	11/14/05 15:40
McNeil Well	5K16003-04	Water	11/14/05 12:20	11/14/05 15:40

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
11/29/05 16:32

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (5K16003-01) Water									
Benzene	ND	0.00100	mg/L	1	EK51705	11/17/05	11/17/05	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		102 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.5 %	80-120		"	"	"	"	
Monitor Well #3 (5K16003-02) Water									
Benzene	ND	0.00100	mg/L	1	EK51705	11/17/05	11/17/05	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		91.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.5 %	80-120		"	"	"	"	
Monitor Well #4 (5K16003-03) Water									
Benzene	ND	0.00100	mg/L	1	EK51705	11/17/05	11/17/05	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		102 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %	80-120		"	"	"	"	
McNeil Well (5K16003-04) Water									
Benzene	ND	0.00100	mg/L	1	EK51705	11/17/05	11/17/05	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		99.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.0 %	80-120		"	"	"	"	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 2 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
11/29/05 16:32

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (5K16003-01) Water									
Total Alkalinity	466	4.00	mg/L	2	EK51814	11/18/05	11/18/05	EPA 310.2M	
Chloride	71.9	10.0	"	20	EK51810	11/17/05	11/18/05	EPA 300.0	
Total Dissolved Solids	1080	5.00	"	1	EK51808	11/17/05	11/18/05	EPA 160.1	
Sulfate	214	10.0	"	20	EK51810	11/17/05	11/18/05	EPA 300.0	
Monitor Well #3 (5K16003-02) Water									
Total Alkalinity	396	4.00	mg/L	2	EK51814	11/18/05	11/18/05	EPA 310.2M	
Chloride	99.0	10.0	"	20	EK51810	11/17/05	11/18/05	EPA 300.0	
Total Dissolved Solids	1030	5.00	"	1	EK51808	11/17/05	11/18/05	EPA 160.1	
Sulfate	208	10.0	"	20	EK51810	11/17/05	11/18/05	EPA 300.0	
Monitor Well #4 (5K16003-03) Water									
Total Alkalinity	270	4.00	mg/L	2	EK51814	11/18/05	11/18/05	EPA 310.2M	
Chloride	87.7	5.00	"	10	EK51810	11/17/05	11/18/05	EPA 300.0	
Total Dissolved Solids	924	5.00	"	1	EK51808	11/17/05	11/18/05	EPA 160.1	
Sulfate	189	5.00	"	10	EK51810	11/17/05	11/18/05	EPA 300.0	
McNeil Well (5K16003-04) Water									
Total Alkalinity	160	4.00	mg/L	2	EK51814	11/18/05	11/18/05	EPA 310.2M	
Chloride	95.9	5.00	"	10	EK51810	11/17/05	11/18/05	EPA 300.0	
Total Dissolved Solids	730	5.00	"	1	EK51808	11/17/05	11/18/05	EPA 160.1	
Sulfate	191	5.00	"	10	EK51810	11/17/05	11/18/05	EPA 300.0	

Environmental Lab of Texas

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
11/29/05 16:32

Total Metals by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (5K16003-01) Water									
Calcium	73.6	0.100	mg/L	10	EK52113	11/21/05	11/21/05	EPA 6010B	
Magnesium	35.1	0.0100	"	"	"	"	"	"	
Potassium	4.95	0.0500	"	1	"	"	"	"	
Sodium	224	0.500	"	50	"	"	"	"	
Monitor Well #3 (5K16003-02) Water									
Calcium	38.8	0.100	mg/L	10	EK52113	11/21/05	11/21/05	EPA 6010B	
Magnesium	28.6	0.0100	"	"	"	"	"	"	
Potassium	3.52	0.0500	"	1	"	"	"	"	
Sodium	251	0.500	"	50	"	"	"	"	
Monitor Well #4 (5K16003-03) Water									
Calcium	70.7	0.100	mg/L	10	EK52113	11/21/05	11/21/05	EPA 6010B	
Magnesium	37.4	0.0100	"	"	"	"	"	"	
Potassium	3.38	0.0500	"	1	"	"	"	"	
Sodium	169	0.500	"	50	"	"	"	"	
McNeil Well (5K16003-04) Water									
Calcium	116	0.500	mg/L	50	EK52113	11/21/05	11/21/05	EPA 6010B	
Magnesium	18.4	0.0100	"	10	"	"	"	"	
Potassium	4.01	0.500	"	"	"	"	"	"	
Sodium	128	0.500	"	50	"	"	"	"	

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
11/29/05 16:32

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EK51705 - EPA 5030C (GC)

Blank (EK51705-BLK1)

Prepared & Analyzed: 11/17/05

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	0.0453		"	0.0400		113	80-120			
Surrogate: 4-Bromofluorobenzene	0.0331		"	0.0400		82.8	80-120			

LCS (EK51705-BS1)

Prepared & Analyzed: 11/17/05

Benzene	0.0568	0.00100	mg/L	0.0500		114	80-120			
Toluene	0.0597	0.00100	"	0.0500		119	80-120			
Ethylbenzene	0.0587	0.00100	"	0.0500		117	80-120			
Xylene (p/m)	0.110	0.00100	"	0.100		110	80-120			
Xylene (o)	0.0597	0.00100	"	0.0500		119	80-120			
Surrogate: a,a,a-Trifluorotoluene	0.0439		"	0.0400		110	80-120			
Surrogate: 4-Bromofluorobenzene	0.0445		"	0.0400		111	80-120			

Calibration Check (EK51705-CCV1)

Prepared & Analyzed: 11/17/05

Benzene	55.8		ug/l	50.0		112	80-120			
Toluene	59.4		"	50.0		119	80-120			
Ethylbenzene	58.4		"	50.0		117	80-120			
Xylene (p/m)	106		"	100		106	80-120			
Xylene (o)	59.0		"	50.0		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	0.0442		mg/L	0.0400		110	80-120			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	80-120			

Matrix Spike (EK51705-MS1)

Source: 5K16003-04

Prepared & Analyzed: 11/17/05

Benzene	0.0520	0.00100	mg/L	0.0500	ND	104	80-120			
Toluene	0.0542	0.00100	"	0.0500	ND	108	80-120			
Ethylbenzene	0.0512	0.00100	"	0.0500	ND	102	80-120			
Xylene (p/m)	0.0918	0.00100	"	0.100	ND	91.8	80-120			
Xylene (o)	0.0517	0.00100	"	0.0500	ND	103	80-120			
Surrogate: a,a,a-Trifluorotoluene	0.0395		"	0.0400		98.8	80-120			
Surrogate: 4-Bromofluorobenzene	0.0340		"	0.0400		85.0	80-120			

Environmental Lab of Texas

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Page 5 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
11/29/05 16:32

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EK51705 - EPA 5030C (GC)

Matrix Spike Dup (EK51705-MSD1)	Source: 5K16003-04			Prepared & Analyzed: 11/17/05						
Benzene	0.0558	0.00100	mg/L	0.0500	ND	112	80-120	7.41	20	
Toluene	0.0579	0.00100	"	0.0500	ND	116	80-120	7.14	20	
Ethylbenzene	0.0551	0.00100	"	0.0500	ND	110	80-120	7.55	20	
Xylene (p/m)	0.0986	0.00100	"	0.100	ND	98.6	80-120	7.14	20	
Xylene (o)	0.0556	0.00100	"	0.0500	ND	111	80-120	7.48	20	
Surrogate: a,a,a-Trifluorotoluene	0.0398		"	0.0400		99.5	80-120			
Surrogate: 4-Bromofluorobenzene	0.0332		"	0.0400		83.0	80-120			

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471
Reported:
11/29/05 16:32

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK51808 - General Preparation (WetChem)										
Blank (EK51808-BLK1)				Prepared: 11/17/05 Analyzed: 11/18/05						
Total Dissolved Solids	ND	5.00	mg/L							
Duplicate (EK51808-DUP1)				Source: 5K16003-01 Prepared: 11/17/05 Analyzed: 11/18/05						
Total Dissolved Solids	1100	5.00	mg/L		1080			1.83	5	
Batch EK51810 - General Preparation (WetChem)										
Blank (EK51810-BLK1)				Prepared: 11/17/05 Analyzed: 11/18/05						
Chloride	ND	0.500	mg/L							
Sulfate	ND	0.500	"							
LCS (EK51810-BS1)				Prepared: 11/17/05 Analyzed: 11/18/05						
Chloride	8.13		mg/L	10.0		81.3	80-120			
Sulfate	9.29		"	10.0		92.9	80-120			
Calibration Check (EK51810-CCV1)				Prepared: 11/17/05 Analyzed: 11/18/05						
Chloride	8.44		mg/L	10.0		84.4	80-120			
Sulfate	9.84		"	10.0		98.4	80-120			
Duplicate (EK51810-DUP1)				Source: 5K15008-01 Prepared: 11/17/05 Analyzed: 11/18/05						
Chloride	101	5.00	mg/L		101			0.00	20	
Sulfate	146	5.00	"		146			0.00	20	
Batch EK51814 - General Preparation (WetChem)										
Blank (EK51814-BLK1)				Prepared & Analyzed: 11/18/05						
Total Alkalinity	ND	2.00	mg/L							

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471
Reported:
11/29/05 16:32

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch EK51814 - General Preparation (WetChem)

Duplicate (EK51814-DUP1)

Source: 5K10007-01

Prepared & Analyzed: 11/18/05

Total Alkalinity	166	4.00	mg/L		168		1.20	20	
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Reference (EK51814-SRM1)

Prepared & Analyzed: 11/18/05

Bicarbonate Alkalinity	229		mg/L	200	114	80-120			
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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
11/29/05 16:32

Total Metals by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EK52113 - 6010B/No Digestion

Blank (EK52113-BLK1)

Prepared & Analyzed: 11/21/05

Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							

Calibration Check (EK52113-CCV1)

Prepared & Analyzed: 11/21/05

Calcium	2.28		mg/L	2.00		114	85-115			
Magnesium	2.10		"	2.00		105	85-115			
Potassium	2.06		"	2.00		103	85-115			
Sodium	1.88		"	2.00		94.0	85-115			

Duplicate (EK52113-DUP1)

Source: 5K15008-01

Prepared & Analyzed: 11/21/05

Calcium	69.8	0.100	mg/L		74.4			6.38	20	
Magnesium	48.1	0.0100	"		49.8			3.47	20	
Potassium	10.0	0.500	"		10.0			0.00	20	
Sodium	106	0.500	"		109			2.79	20	

Environmental Lab of Texas

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Page 9 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
11/29/05 16:32

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:

Raland K. Tuttle

Date:

11/29/2005

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.

12600 West 1-20 East
Odessa, Texas 79765

Phone: 432-583-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Kristin Farris Pope kprioceswd@valornet.com

Company Name RICE Operating Company

Company Address: 122 W. Taylor Street

City/State/Zip: Hobbs, New Mexico 88240

Telephone No: (505) 393-9174

Fax No: (505) 397-1471

Sampler Signature: Rozanne Johnson (505) 631-9310

Email: rozanne@valornet.com

Project Name:

Project #:

Project Loc: Lea County

॥०॥

LAB # (lab use only)		FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative										Matrix				Analyze For:											
						HNO ₃	HCl	NACH	H ₂ SO ₄	None	Other (Specify)	Water	Sludge	Soil	Other (Specify):	TPH: 418 1 801SM 1005 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , CO ₃ , HCO ₃)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 4260	FOI	N.O.R.M.	Total Dissolved Solids					
01	01	Monitor Well # 1	11-14	15:40	3	X	X					X					X	X	X				X								
02	02	3		14:10																											
03	03	4		10:15																											
04	04	McNeil Well		12:20																											

Special Instructions:

PLEASE Email RESULTS TO: kpriceswd@valornet.com & mfranks@riceswd.com

Sample Containers Intact? ☒ N

Labels on container? ☒ N

Custody Seals Containing Cooler Temperature Upon Receipt: -3°C

Laboratory Comments: water not frozen

Relinquished by: [Signature]

Relinquished by: [Signature]

Received by: James Johnson

Received by: ELDT: [Signature]

Date: 11-16-05

Date: 11/16/05

Time: 05:30

Time: 08:00

Email: rozanne@valornet.com

00011002

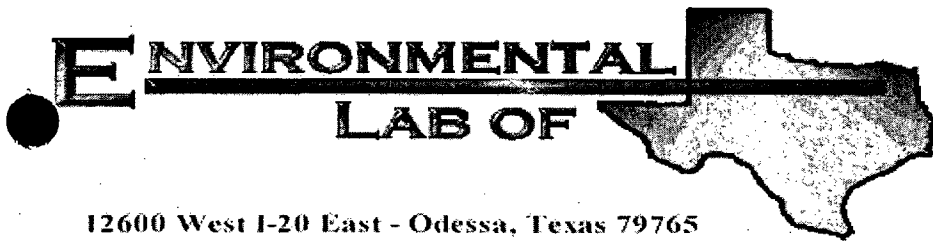
Client: KUG CP,
Date/Time: 11/15/05 8:00
Order #: 5K16003
Initials: OK

Temperature of container/cooler?	Yes	No	-5.0 C
Shipping container/cooler in good condition?	Yes	No	
Custody Seals intact on shipping container/cooler?	Yes	No	Not present
Custody Seals intact on sample bottles?	Yes	No	Not present
Chain of custody present?	Yes	No	
Sample Instructions complete on Chain of Custody?	Yes	No	
Chain of Custody signed when relinquished and received?	Yes	No	
Chain of custody agrees with sample label(s)	Yes	No	
Container labels legible and intact?	Yes	No	
Sample Matrix and properties same as on chain of custody?	Yes	No	
Samples in proper container/bottle?	Yes	No	
Samples properly preserved?	Yes	No	
Sample bottles intact?	Yes	No	
Preservations documented on Chain of Custody?	Yes	No	
Containers documented on Chain of Custody?	Yes	No	
Sufficient sample amount for indicated test?	Yes	No	
Samples received within sufficient hold time?	Yes	No	
VOC samples have zero headspace?	Yes	No	Not Applicable

Samples not frozen.

Contact Person: - _____ Date/Time: _____ Contacted by: _____
Regarding: _____

[illegible]



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris-Pope

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: Hobbs I-9 SWD

Project Number: None Given

Location: Lea County

Lab Order Number: 6B16005

Report Date: 03/10/06

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
03/10/06 08:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well #1	6B16005-01	Water	02/13/06 09:00	02/16/06 08:05
Monitor Well #3	6B16005-02	Water	02/13/06 12:45	02/16/06 08:05
Monitor Well #4	6B16005-03	Water	02/13/06 14:00	02/16/06 08:05
McNeil Well	6B16005-04	Water	02/13/06 11:00	02/16/06 08:05

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
03/10/06 08:48

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6B16005-01) Water									
Benzene	ND	0.00100	mg/L	1	EB62210	02/22/06	02/22/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		94.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.8 %	80-120		"	"	"	"	
Monitor Well #3 (6B16005-02) Water									
Benzene	ND	0.00100	mg/L	1	EB62210	02/22/06	02/22/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		93.2 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.2 %	80-120		"	"	"	"	
Monitor Well #4 (6B16005-03) Water									
Benzene	ND	0.00100	mg/L	1	EB62210	02/22/06	02/22/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		88.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.5 %	80-120		"	"	"	"	
McNeil Well (6B16005-04) Water									
Benzene	ND	0.00100	mg/L	1	EB62210	02/22/06	02/22/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		93.2 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	80-120		"	"	"	"	

Environmental Lab of Texas

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Page 2 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
03/10/06 08:48

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6B16005-01) Water									
Total Alkalinity	372	2.00	mg/L	1	EB62205	02/23/06	02/23/06	EPA 310.1M	
Chloride	118	5.00	"	10	EB61712	02/17/06	02/20/06	EPA 300.0	
Total Dissolved Solids	1100	5.00	"	1	EB61713	02/16/06	02/17/06	EPA 160.1	
Sulfate	291	5.00	"	10	EB61712	02/17/06	02/20/06	EPA 300.0	
Monitor Well #3 (6B16005-02) Water									
Total Alkalinity	386	2.00	mg/L	1	EB62205	02/23/06	02/23/06	EPA 310.1M	
Chloride	127	5.00	"	10	EB61712	02/17/06	02/20/06	EPA 300.0	
Total Dissolved Solids	1130	5.00	"	1	EB61713	02/16/06	02/17/06	EPA 160.1	
Sulfate	280	5.00	"	10	EB61712	02/17/06	02/20/06	EPA 300.0	
Monitor Well #4 (6B16005-03) Water									
Total Alkalinity	345	2.00	mg/L	1	EB62205	02/23/06	02/23/06	EPA 310.1M	
Chloride	117	5.00	"	10	EB61712	02/17/06	02/20/06	EPA 300.0	
Total Dissolved Solids	952	5.00	"	1	EB61713	02/16/06	02/17/06	EPA 160.1	
Sulfate	281	5.00	"	10	EB61712	02/17/06	02/20/06	EPA 300.0	
McNeil Well (6B16005-04) Water									
Total Alkalinity	152	2.00	mg/L	1	EB62205	02/23/06	02/23/06	EPA 310.1M	
Chloride	121	5.00	"	10	EB61712	02/17/06	02/20/06	EPA 300.0	
Total Dissolved Solids	798	5.00	"	1	EB61713	02/16/06	02/17/06	EPA 160.1	
Sulfate	251	5.00	"	10	EB61712	02/17/06	02/20/06	EPA 300.0	

Environmental Lab of Texas

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Page 3 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
03/10/06 08:48

Total Metals by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6B16005-01) Water									
Calcium	144	0.500	mg/L	50	EB61708	02/16/06	02/17/06	EPA 6010B	
Magnesium	32.6	0.0100	"	10	"	"	"	"	
Potassium	3.92	0.0500	"	1	"	"	"	"	
Sodium	222	0.500	"	50	"	"	"	"	
Monitor Well #3 (6B16005-02) Water									
Calcium	122	0.500	mg/L	50	EB61708	02/16/06	02/17/06	EPA 6010B	
Magnesium	28.6	0.0100	"	10	"	"	"	"	
Potassium	2.92	0.0500	"	1	"	"	"	"	
Sodium	228	0.500	"	50	"	"	"	"	
Monitor Well #4 (6B16005-03) Water									
Calcium	147	0.500	mg/L	50	EB61708	02/16/06	02/17/06	EPA 6010B	
Magnesium	32.0	0.0100	"	10	"	"	"	"	
Potassium	2.22	0.0500	"	1	"	"	"	"	
Sodium	136	0.500	"	50	"	"	"	"	
McNeil Well (6B16005-04) Water									
Calcium	103	0.500	mg/L	50	EB61708	02/16/06	02/17/06	EPA 6010B	
Magnesium	17.5	0.0100	"	10	"	"	"	"	
Potassium	5.09	0.0500	"	1	"	"	"	"	
Sodium	120	0.500	"	50	"	"	"	"	

Environmental Lab of Texas

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Page 4 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
03/10/06 08:48

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EB62210 - EPA 5030C (GC)

Blank (EB62210-BLK1)

Prepared & Analyzed: 02/22/06

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	33.2		ug/l	40.0		83.0	80-120			
Surrogate: 4-Bromofluorobenzene	32.2		"	40.0		80.5	80-120			

LCS (EB62210-BS1)

Prepared: 02/22/06 Analyzed: 02/23/06

Benzene	0.0461	0.00100	mg/L	0.0500		92.2	80-120			
Toluene	0.0509	0.00100	"	0.0500		102	80-120			
Ethylbenzene	0.0576	0.00100	"	0.0500		115	80-120			
Xylene (p/m)	0.120	0.00100	"	0.100		120	80-120			
Xylene (o)	0.0597	0.00100	"	0.0500		119	80-120			
Surrogate: a,a,a-Trifluorotoluene	38.0		ug/l	40.0		95.0	80-120			
Surrogate: 4-Bromofluorobenzene	42.7		"	40.0		107	80-120			

Calibration Check (EB62210-CCV1)

Prepared: 02/22/06 Analyzed: 02/23/06

Benzene	45.5		ug/l	50.0		91.0	80-120			
Toluene	50.4		"	50.0		101	80-120			
Ethylbenzene	56.9		"	50.0		114	80-120			
Xylene (p/m)	118		"	100		118	80-120			
Xylene (o)	58.5		"	50.0		117	80-120			
Surrogate: a,a,a-Trifluorotoluene	39.1		"	40.0		97.8	80-120			
Surrogate: 4-Bromofluorobenzene	42.7		"	40.0		107	80-120			

Matrix Spike (EB62210-MS1)

Source: 6B16005-01

Prepared: 02/22/06 Analyzed: 02/23/06

Benzene	0.0463	0.00100	mg/L	0.0500	ND	92.6	80-120			
Toluene	0.0511	0.00100	"	0.0500	ND	102	80-120			
Ethylbenzene	0.0576	0.00100	"	0.0500	ND	115	80-120			
Xylene (p/m)	0.119	0.00100	"	0.100	ND	119	80-120			
Xylene (o)	0.0596	0.00100	"	0.0500	ND	119	80-120			
Surrogate: a,a,a-Trifluorotoluene	38.1		ug/l	40.0		95.2	80-120			
Surrogate: 4-Bromofluorobenzene	41.4		"	40.0		104	80-120			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 5 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
03/10/06 08:48

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EB62210 - EPA 5030C (GC)

Matrix Spike Dup (EB62210-MSD1)

Source: 6B16005-01

Prepared: 02/22/06 Analyzed: 02/23/06

Benzene	0.0467	0.00100	mg/L	0.0500	ND	93.4	80-120	0.860	20	
Toluene	0.0508	0.00100	"	0.0500	ND	102	80-120	0.00	20	
Ethylbenzene	0.0561	0.00100	"	0.0500	ND	112	80-120	2.64	20	
Xylene (p/m)	0.116	0.00100	"	0.100	ND	116	80-120	2.55	20	
Xylene (o)	0.0580	0.00100	"	0.0500	ND	116	80-120	2.55	20	
Surrogate: a,a,a-Trifluorotoluene	36.8		ug/l	40.0		92.0	80-120			
Surrogate: 4-Bromofluorobenzene	38.6		"	40.0		96.5	80-120			

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471
Reported:
03/10/06 08:48

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch EB61712 - General Preparation (WetChem)									
Blank (EB61712-BLK1) Prepared: 02/17/06 Analyzed: 02/20/06									
Sulfate	ND	0.500	mg/L						
Chloride	ND	0.500	"						
LCS (EB61712-BS1) Prepared: 02/17/06 Analyzed: 02/20/06									
Sulfate	8.36		mg/L	10.0		83.6 80-120			
Chloride	8.58		"	10.0		85.8 80-120			
Calibration Check (EB61712-CCV1) Prepared: 02/17/06 Analyzed: 02/20/06									
Sulfate	8.95		mg/L	10.0		89.5 80-120			
Chloride	8.88		"	10.0		88.8 80-120			
Duplicate (EB61712-DUP1) Source: 6B16004-01 Prepared: 02/17/06 Analyzed: 02/20/06									
Sulfate	149	5.00	mg/L		149		0.00	20	
Chloride	189	5.00	"		189		0.00	20	
Batch EB61713 - General Preparation (WetChem)									
Blank (EB61713-BLK1) Prepared: 02/16/06 Analyzed: 02/17/06									
Total Dissolved Solids	ND	5.00	mg/L						
Duplicate (EB61713-DUP1) Source: 6B16004-01 Prepared: 02/16/06 Analyzed: 02/17/06									
Total Dissolved Solids	918	5.00	mg/L		958		4.26	5	
Duplicate (EB61713-DUP2) Source: 6B16005-02 Prepared: 02/16/06 Analyzed: 02/17/06									
Total Dissolved Solids	1100	5.00	mg/L		1130		2.69	5	

Environmental Lab of Texas

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Page 7 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
03/10/06 08:48

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB62205 - General Preparation (WetChem)										
Blank (EB62205-BLK1)				Prepared & Analyzed: 02/23/06						
Total Alkalinity	ND	2.00	mg/L							
LCS (EB62205-BS1)				Prepared & Analyzed: 02/23/06						
Bicarbonate Alkalinity	207	2.00	mg/L	200		104	85-115			
Duplicate (EB62205-DUP1)				Source: 6B16004-01		Prepared & Analyzed: 02/23/06				
Total Alkalinity	273	2.00	mg/L		278			1.81	20	
Reference (EB62205-SRM1)				Prepared & Analyzed: 02/23/06						
Total Alkalinity	97.0		mg/L	100		97.0	90-110			

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
03/10/06 08:48

Total Metals by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EB61708 - 6010B/No Digestion

Blank (EB61708-BLK1)

Prepared: 02/16/06 Analyzed: 02/17/06

Calcium	ND	0.0100	mg/L
Magnesium	ND	0.00100	"
Potassium	ND	0.0500	"
Sodium	ND	0.0100	"

Calibration Check (EB61708-CCV1)

Prepared: 02/16/06 Analyzed: 02/17/06

Calcium	2.28		mg/L	2.00	114	85-115
Magnesium	2.04		"	2.00	102	85-115
Potassium	1.92		"	2.00	96.0	85-115
Sodium	2.06		"	2.00	103	85-115

Duplicate (EB61708-DUP1)

Source: 6B16007-03

Prepared: 02/16/06 Analyzed: 02/17/06

Calcium	428	0.500	mg/L	429	0.233	20
Magnesium	168	0.0500	"	176	4.65	20
Potassium	17.9	0.500	"	18.8	4.90	20
Sodium	1440	2.00	"	1450	0.692	20

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471
Reported:
03/10/06 08:48

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:

Raland K Tuttle

Date:

3/10/2006

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas Variance / Corrective Action Report - Sample Log-In

Client: Rite Op.
Date/Time: 2/16/06 8:05
Order #: 6B16005
Initials: CK

Sample Receipt Checklist

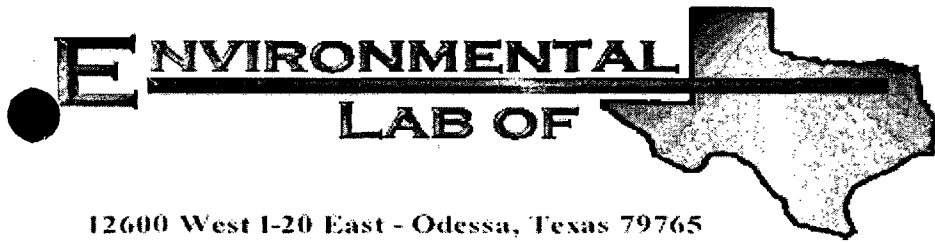
Temperature of container/cooler?	Yes	No	0.5	C
Shipping container/cooler in good condition?	☒	No		
Custody Seals intact on shipping container/cooler?	☒	No	Not present	
Custody Seals intact on sample bottles?	☒	No	Not present	
Chain of custody present?	☒	No		
Sample Instructions complete on Chain of Custody?	☒	No		
Chain of Custody signed when relinquished and received?	☒	No		
Chain of custody agrees with sample label(s)	☒	No		
Container labels legible and intact?	☒	No		
Sample Matrix and properties same as on chain of custody?	☒	No		
Samples in proper container/bottle?	☒	No		
Samples properly preserved?	☒	No		
Sample bottles intact?	☒	No		
Preservations documented on Chain of Custody?	☒	No		
Containers documented on Chain of Custody?	☒	No		
Sufficient sample amount for indicated test?	☒	No		
Samples received within sufficient hold time?	☒	No		
VOC samples have zero headspace?	☒	No	Not Applicable	

Other observations:

Variance Documentation:

Contact Person: - _____ Date/Time: _____ Contacted by: _____
Regarding: _____

Corrective Action Taken:



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris-Pope

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: Hobbs I-9 SWD

Project Number: None Given

Location: Lea County

Lab Order Number: 6E11017

Report Date: 05/22/06

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
05/22/06 09:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well #1	6E11017-01	Water	05/10/06 10:40	05/11/06 14:30
Monitor Well #3	6E11017-02	Water	05/10/06 09:10	05/11/06 14:30
Monitor Well #4	6E11017-03	Water	05/10/06 12:00	05/11/06 14:30
McNeil Well	6E11017-04	Water	05/10/06 13:50	05/11/06 14:30

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
05/22/06 09:37

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6E11017-01) Water									
Benzene	ND	0.00100	mg/L	1	EE61222	05/12/06	05/12/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		80.2 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.5 %	80-120		"	"	"	"	
Monitor Well #3 (6E11017-02) Water									
Benzene	ND	0.00100	mg/L	1	EE61222	05/12/06	05/15/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		94.2 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.8 %	80-120		"	"	"	"	
Monitor Well #4 (6E11017-03) Water									
Benzene	ND	0.00100	mg/L	1	EE61222	05/12/06	05/12/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		89.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.8 %	80-120		"	"	"	"	
McNeil Well (6E11017-04) Water									
Benzene	ND	0.00100	mg/L	1	EE61222	05/12/06	05/15/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		94.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.2 %	80-120		"	"	"	"	

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
05/22/06 09:37

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6E11017-01) Water									
Total Alkalinity	441	2.00	mg/L	1	EE61212	05/12/06	05/12/06	EPA 310.1M	
Chloride	143	10.0	"	20	EE61226	05/12/06	05/12/06	EPA 300.0	
Total Dissolved Solids	1160	5.00	"	1	EE61211	05/12/06	05/12/06	EPA 160.1	
Sulfate	300	10.0	"	20	EE61226	05/12/06	05/12/06	EPA 300.0	
Monitor Well #3 (6E11017-02) Water									
Total Alkalinity	386	2.00	mg/L	1	EE61212	05/12/06	05/12/06	EPA 310.1M	
Chloride	140	10.0	"	20	EE61226	05/12/06	05/12/06	EPA 300.0	
Total Dissolved Solids	1180	5.00	"	1	EE61211	05/12/06	05/12/06	EPA 160.1	
Sulfate	274	10.0	"	20	EE61226	05/12/06	05/12/06	EPA 300.0	
Monitor Well #4 (6E11017-03) Water									
Total Alkalinity	350	2.00	mg/L	1	EE61212	05/12/06	05/12/06	EPA 310.1M	
Chloride	123	5.00	"	10	EE61226	05/12/06	05/12/06	EPA 300.0	
Total Dissolved Solids	1060	5.00	"	1	EE61211	05/12/06	05/12/06	EPA 160.1	
Sulfate	284	5.00	"	10	EE61226	05/12/06	05/12/06	EPA 300.0	
McNeil Well (6E11017-04) Water									
Total Alkalinity	160	2.00	mg/L	1	EE61212	05/12/06	05/12/06	EPA 310.1M	
Chloride	136	5.00	"	10	EE61226	05/12/06	05/12/06	EPA 300.0	
Total Dissolved Solids	888	5.00	"	1	EE61211	05/12/06	05/12/06	EPA 160.1	
Sulfate	275	5.00	"	10	EE61226	05/12/06	05/12/06	EPA 300.0	

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs 1-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
05/22/06 09:37

Total Metals by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6E11017-01) Water									
Calcium	139	0.500	mg/L	50	EE61503	05/15/06	05/15/06	EPA 6010B	
Magnesium	33.2	0.0100	"	10	"	"	"	"	
Potassium	2.37	0.500	"	"	"	"	"	"	
Sodium	264	0.500	"	50	"	"	"	"	
Monitor Well #3 (6E11017-02) Water									
Calcium	89.5	0.100	mg/L	10	EE61503	05/15/06	05/15/06	EPA 6010B	
Magnesium	28.6	0.0100	"	"	"	"	"	"	
Potassium	1.77	0.500	"	"	"	"	"	"	
Sodium	253	0.500	"	50	"	"	"	"	
Monitor Well #4 (6E11017-03) Water									
Calcium	155	0.500	mg/L	50	EE61503	05/15/06	05/15/06	EPA 6010B	
Magnesium	33.3	0.0100	"	10	"	"	"	"	
Potassium	1.28	0.500	"	"	"	"	"	"	
Sodium	167	0.500	"	50	"	"	"	"	
McNeil Well (6E11017-04) Water									
Calcium	117	0.500	mg/L	50	EE61503	05/15/06	05/15/06	EPA 6010B	
Magnesium	19.8	0.0100	"	10	"	"	"	"	
Potassium	1.96	0.500	"	"	"	"	"	"	
Sodium	119	0.500	"	50	"	"	"	"	

Environmental Lab of Texas

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Page 4 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
05/22/06 09:37

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EE61222 - EPA 5030C (GC)

Blank (EE61222-BLK1)

Prepared & Analyzed: 05/12/06

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	34.8		ug/l	40.0		87.0	80-120			
Surrogate: 4-Bromofluorobenzene	33.7		"	40.0		84.2	80-120			

LCS (EE61222-BS1)

Prepared & Analyzed: 05/12/06

Benzene	0.0495	0.00100	mg/L	0.0500		99.0	80-120			
Toluene	0.0512	0.00100	"	0.0500		102	80-120			
Ethylbenzene	0.0495	0.00100	"	0.0500		99.0	80-120			
Xylene (p/m)	0.116	0.00100	"	0.100		116	80-120			
Xylene (o)	0.0568	0.00100	"	0.0500		114	80-120			
Surrogate: a,a,a-Trifluorotoluene	33.6		ug/l	40.0		84.0	80-120			
Surrogate: 4-Bromofluorobenzene	39.1		"	40.0		97.8	80-120			

Calibration Check (EE61222-CCV1)

Prepared: 05/12/06 Analyzed: 05/15/06

Benzene	53.9		ug/l	50.0		108	80-120			
Toluene	53.4		"	50.0		107	80-120			
Ethylbenzene	57.5		"	50.0		115	80-120			
Xylene (p/m)	114		"	100		114	80-120			
Xylene (o)	56.5		"	50.0		113	80-120			
Surrogate: a,a,a-Trifluorotoluene	40.5		"	40.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	39.6		"	40.0		99.0	80-120			

Matrix Spike (EE61222-MS1)

Source: 6E11015-01

Prepared & Analyzed: 05/12/06

Benzene	0.0487	0.00100	mg/L	0.0500	ND	97.4	80-120			
Toluene	0.0502	0.00100	"	0.0500	ND	100	80-120			
Ethylbenzene	0.0521	0.00100	"	0.0500	ND	104	80-120			
Xylene (p/m)	0.113	0.00100	"	0.100	ND	113	80-120			
Xylene (o)	0.0552	0.00100	"	0.0500	ND	110	80-120			
Surrogate: a,a,a-Trifluorotoluene	37.0		ug/l	40.0		92.5	80-120			
Surrogate: 4-Bromofluorobenzene	40.3		"	40.0		101	80-120			

Environmental Lab of Texas

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Page 5 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471
Reported:
05/22/06 09:37

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EE61222 - EPA 5030C (GC)

Matrix Spike Dup (EE61222-MSD1)

Source: 6E11015-01

Prepared & Analyzed: 05/12/06

Benzene	0.0491	0.00100	mg/L	0.0500	ND	98.2	80-120	0.818	20	
Toluene	0.0511	0.00100	"	0.0500	ND	102	80-120	1.98	20	
Ethylbenzene	0.0526	0.00100	"	0.0500	ND	105	80-120	0.957	20	
Xylene (p/m)	0.116	0.00100	"	0.100	ND	116	80-120	2.62	20	
Xylene (o)	0.0570	0.00100	"	0.0500	ND	114	80-120	3.57	20	
Surrogate: a,a,a-Trifluorotoluene	38.0		ug/l	40.0		95.0	80-120			
Surrogate: 4-Bromofluorobenzene	39.7		"	40.0		99.2	80-120			

Environmental Lab of Texas

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Page 6 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471
Reported:
05/22/06 09:37

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EE61211 - Filtration Preparation

Blank (EE61211-BLK1)

Prepared & Analyzed: 05/12/06

Total Dissolved Solids ND 5.00 mg/L

Duplicate (EE61211-DUP1)

Source: 6E11002-01

Prepared & Analyzed: 05/12/06

Total Dissolved Solids 10800 5.00 mg/L 11000 1.83 5

Batch EE61212 - General Preparation (WetChem)

Blank (EE61212-BLK1)

Prepared & Analyzed: 05/12/06

Total Alkalinity ND 2.00 mg/L

Duplicate (EE61212-DUP1)

Source: 6E11002-01

Prepared & Analyzed: 05/12/06

Total Alkalinity 145 2.00 mg/L 146 0.687 20

Reference (EE61212-SRM1)

Prepared & Analyzed: 05/12/06

Total Alkalinity 96.0 mg/L 100 96.0 90-110

Batch EE61226 - General Preparation (WetChem)

Blank (EE61226-BLK1)

Prepared & Analyzed: 05/12/06

Chloride ND 0.500 mg/L

Sulfate ND 0.500 "

LCS (EE61226-BS1)

Prepared & Analyzed: 05/12/06

Sulfate 8.23 mg/L 10.0 82.3 80-120

Chloride 10.1 " 10.0 101 80-120

Environmental Lab of Texas

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
05/22/06 09:37

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE61226 - General Preparation (WetChem)										
Calibration Check (EE61226-CCV1)				Prepared & Analyzed: 05/12/06						
Chloride	10.9		mg/L	10.0		109	80-120			
Sulfate	10.0		"	10.0		100	80-120			
Duplicate (EE61226-DUP1)				Source: 6E11011-01	Prepared & Analyzed: 05/12/06					
Sulfate	321	10.0	mg/L		322			0.311	20	
Chloride	324	10.0	"		326			0.615	20	
Duplicate (EE61226-DUP2)				Source: 6E11017-01	Prepared & Analyzed: 05/12/06					
Sulfate	300	10.0	mg/L		300			0.00	20	
Chloride	142	10.0	"		143			0.702	20	
Matrix Spike (EE61226-MS1)				Source: 6E11011-01	Prepared & Analyzed: 05/12/06					
Chloride	557	10.0	mg/L	200	326	116	75-125			
Sulfate	552	10.0	"	200	322	115	75-125			
Matrix Spike (EE61226-MS2)				Source: 6E11017-01	Prepared & Analyzed: 05/12/06					
Sulfate	499	10.0	mg/L	200	300	99.5	75-125			
Chloride	358	10.0	"	200	143	108	75-125			

Environmental Lab of Texas

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Page 8 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
05/22/06 09:37

Total Metals by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EE61503 - 6010B/No Digestion

Blank (EE61503-BLK1)

Prepared & Analyzed: 05/15/06

Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							

Calibration Check (EE61503-CCV1)

Prepared & Analyzed: 05/15/06

Calcium	2.13		mg/L	2.00		106	85-115			
Magnesium	2.19		"	2.00		110	85-115			
Potassium	1.72		"	2.00		86.0	85-115			
Sodium	1.72		"	2.00		86.0	85-115			

Duplicate (EE61503-DUP1)

Source: 6E11002-01

Prepared & Analyzed: 05/15/06

Calcium	1080	2.00	mg/L		1130			4.52	20	
Magnesium	240	0.0500	"		225			6.45	20	
Potassium	69.7	2.50	"		71.7			2.83	20	
Sodium	2660	5.00	"		2590			2.67	20	

Environmental Lab of Texas

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Reported:
05/22/06 09:37

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:

Raland K. Tuttle

Date:

5/22/2006

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

**12600 West I-20 East
Odessa, Texas 79765**

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Kristin Farris Pope kpope@riceswd.com

Project Name: Hobbs I-9 SWD

Company Name RICE Operating Company

Project #:

Company Address: 122 W. Taylor Street

Project Loc: Lea County

City/State/Zip: Hobbs, New Mexico 88240

註

Telephone No: (505) 393-9174

Fax No: (505) 397-1471

Sampler Signature: Rozanne Johnson (505) 631-9310

Email: rozanne@valornet.com

[illegible]

Special Instructions:

PLEASE Email RESULTS TO: kpope@riceswd.com & mfranks@riceswd.com

Sample Containers: Intact?

Labels on container?

Custody Seals: Containers / Cooler

Temperature Upon Receipt: _____

Relinquished by:

Y

Rozanne Johnson

Time

22

Received by:

Date _____

Time

Laboratory Comments:

1000

Environmental Lab of Texas

Variance / Corrective Action Report – Sample Log-In

Client: Rice Op.
 Date/Time: 8/11/06 2:30
 Order #: 6E11017
 Initials: CR

Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	()	C
Shipping container/cooler in good condition?	☒ Yes	No		
Custody Seals intact on shipping container/cooler?	☒ Yes	No	Not present	
Custody Seals intact on sample bottles?	☒ Yes	No	Not present	
Chain of custody present?	☒ Yes	No		
Sample Instructions complete on Chain of Custody?	☒ Yes	No		
Chain of Custody signed when relinquished and received?	☒ Yes	No		
Chain of custody agrees with sample label(s)	☒ Yes	No		
Container labels legible and intact?	☒ Yes	No		
Sample Matrix and properties same as on chain of custody?	☒ Yes	No		
Samples in proper container/bottle?	☒ Yes	No		
Samples properly preserved?	☒ Yes	No		
Sample bottles intact?	☒ Yes	No		
Preservations documented on Chain of Custody?	☒ Yes	No		
Containers documented on Chain of Custody?	☒ Yes	No		
Sufficient sample amount for indicated test?	☒ Yes	No		
All samples received within sufficient hold time?	☒ Yes	No		
Vials samples have zero headspace?	☒ Yes	No	Not Applicable	

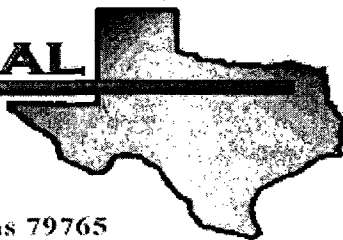
Other observations:

Variance Documentation:

Contact Person: _____ Date/Time: _____ Contacted by: _____
 Regarding: _____

Corrective Action Taken:

ENVIRONMENTAL LAB OF



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris-Pope

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: Hobbs I-9 SWD

Project Number: None Given

Location: Lea County

Lab Order Number: 6H18013

Report Date: 08/29/06

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well #1	6H18013-01	Water	08/16/06 08:30	08-18-2006 10:20
Monitor Well #3	6H18013-02	Water	08/16/06 11:40	08-18-2006 10:20
Monitor Well #4	6H18013-03	Water	08/16/06 09:55	08-18-2006 10:20
McNeill Well	6H18013-04	Water	08/16/06 15:05	08-18-2006 10:20

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6H18013-01) Water									
Benzene	ND	0.00100	mg/L	1	EH62121	08/21/06	08/22/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		98.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.5 %	80-120		"	"	"	"	
Monitor Well #3 (6H18013-02) Water									
Benzene	ND	0.00100	mg/L	1	EH62121	08/21/06	08/22/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		104 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	80-120		"	"	"	"	
Monitor Well #4 (6H18013-03) Water									
Benzene	ND	0.00100	mg/L	1	EH62121	08/21/06	08/22/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		99.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.5 %	80-120		"	"	"	"	
McNeill Well (6H18013-04) Water									
Benzene	ND	0.00100	mg/L	1	EH62121	08/21/06	08/22/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		104 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.8 %	80-120		"	"	"	"	

Environmental Lab of Texas

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Page 2 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6H18013-01) Water									
Total Alkalinity	568	2.00	mg/L	1	EH62128	08/21/06	08/21/06	EPA 310.1M	
Chloride	25.4	5.00	"	10	EH62101	08/21/06	08/21/06	EPA 300.0	
Total Dissolved Solids	984	10.0	"	1	EH62303	08/18/06	08/22/06	EPA 160.1	
Sulfate	243	5.00	"	10	EH62101	08/21/06	08/21/06	EPA 300.0	
Monitor Well #3 (6H18013-02) Water									
Total Alkalinity	452	2.00	mg/L	1	EH62128	08/21/06	08/21/06	EPA 310.1M	
Chloride	123	10.0	"	20	EH62101	08/21/06	08/21/06	EPA 300.0	
Total Dissolved Solids	1110	10.0	"	1	EH62303	08/18/06	08/22/06	EPA 160.1	
Sulfate	269	10.0	"	20	EH62101	08/21/06	08/21/06	EPA 300.0	
Monitor Well #4 (6H18013-03) Water									
Total Alkalinity	392	2.00	mg/L	1	EH62128	08/21/06	08/21/06	EPA 310.1M	
Chloride	107	10.0	"	20	EH62101	08/21/06	08/21/06	EPA 300.0	
Total Dissolved Solids	1120	10.0	"	1	EH62303	08/18/06	08/22/06	EPA 160.1	
Sulfate	294	10.0	"	20	EH62101	08/21/06	08/21/06	EPA 300.0	
McNeill Well (6H18013-04) Water									
Total Alkalinity	170	2.00	mg/L	1	EH62128	08/21/06	08/21/06	EPA 310.1M	
Chloride	136	5.00	"	10	EH62101	08/21/06	08/21/06	EPA 300.0	
Total Dissolved Solids	930	10.0	"	1	EH62303	08/18/06	08/22/06	EPA 160.1	
Sulfate	336	5.00	"	10	EH62101	08/21/06	08/21/06	EPA 300.0	

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
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Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Total Metals by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6H18013-01) Water									
Calcium	132	4.05	mg/L	50	EH62313	08/23/06	08/23/06	EPA 6010B	
Magnesium	33.8	0.360	"	10	"	"	"	"	
Potassium	1.57	0.600	"	"	"	"	"	"	
Sodium	126	2.15	"	50	"	"	"	"	
Monitor Well #3 (6H18013-02) Water									
Calcium	91.2	4.05	mg/L	50	EH62313	08/23/06	08/23/06	EPA 6010B	
Magnesium	29.2	0.360	"	10	"	"	"	"	
Potassium	1.83	0.600	"	"	"	"	"	"	
Sodium	208	2.15	"	50	"	"	"	"	
Monitor Well #4 (6H18013-03) Water									
Calcium	150	4.05	mg/L	50	EH62313	08/23/06	08/23/06	EPA 6010B	
Magnesium	36.2	0.360	"	10	"	"	"	"	
Potassium	1.15	0.600	"	"	"	"	"	"	
Sodium	165	2.15	"	50	"	"	"	"	
McNeill Well (6H18013-04) Water									
Calcium	124	4.05	mg/L	50	EH62313	08/23/06	08/23/06	EPA 6010B	
Magnesium	20.6	0.360	"	10	"	"	"	"	
Potassium	3.10	0.600	"	"	"	"	"	"	
Sodium	129	2.15	"	50	"	"	"	"	

Environmental Lab of Texas

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EH62121 - EPA 5030C (GC)

Blank (EH62121-BLK1)

Prepared: 08/21/06 Analyzed: 08/22/06

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	40.3		ug/l	40.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	36.7		"	40.0		91.8	80-120			

LCS (EH62121-BS1)

Prepared & Analyzed: 08/21/06

Benzene	0.0460	0.00100	mg/L	0.0500		92.0	80-120			
Toluene	0.0503	0.00100	"	0.0500		101	80-120			
Ethylbenzene	0.0463	0.00100	"	0.0500		92.6	80-120			
Xylene (p/m)	0.113	0.00100	"	0.100		113	80-120			
Xylene (o)	0.0565	0.00100	"	0.0500		113	80-120			
Surrogate: a,a,a-Trifluorotoluene	39.7		ug/l	40.0		99.2	80-120			
Surrogate: 4-Bromofluorobenzene	45.0		"	40.0		112	80-120			

Calibration Check (EH62121-CCV1)

Prepared: 08/21/06 Analyzed: 08/22/06

Benzene	48.7		ug/l	50.0		97.4	80-120			
Toluene	52.3		"	50.0		105	80-120			
Ethylbenzene	57.3		"	50.0		115	80-120			
Xylene (p/m)	114		"	100		114	80-120			
Xylene (o)	57.6		"	50.0		115	80-120			
Surrogate: a,a,a-Trifluorotoluene	44.7		"	40.0		112	80-120			
Surrogate: 4-Bromofluorobenzene	38.3		"	40.0		95.8	80-120			

Matrix Spike (EH62121-MS1)

Source: 6H18007-01

Prepared: 08/21/06 Analyzed: 08/22/06

Benzene	0.0464	0.00100	mg/L	0.0500	ND	92.8	80-120			
Toluene	0.0550	0.00100	"	0.0500	ND	110	80-120			
Ethylbenzene	0.0554	0.00100	"	0.0500	ND	111	80-120			
Xylene (p/m)	0.117	0.00100	"	0.100	ND	117	80-120			
Xylene (o)	0.0575	0.00100	"	0.0500	ND	115	80-120			
Surrogate: a,a,a-Trifluorotoluene	41.8		ug/l	40.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	46.5		"	40.0		116	80-120			

Environmental Lab of Texas

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH62121 - EPA 5030C (GC)										
Matrix Spike Dup (EH62121-MSD1)		Source: 6H18007-01		Prepared: 08/21/06 Analyzed: 08/22/06						
Benzene	0.0473	0.00100	mg/L	0.0500	ND	94.6	80-120	1.92	20	
Toluene	0.0535	0.00100	"	0.0500	ND	107	80-120	2.76	20	
Ethylbenzene	0.0549	0.00100	"	0.0500	ND	110	80-120	0.905	20	
Xylene (p/m)	0.120	0.00100	"	0.100	ND	120	80-120	2.53	20	
Xylene (o)	0.0583	0.00100	"	0.0500	ND	117	80-120	1.72	20	
Surrogate: a,a,a-Trifluorotoluene	42.9		ug/l	40.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	46.4		"	40.0		116	80-120			

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch EH62101 - General Preparation (WetChem)									
Blank (EH62101-BLK1)					Prepared & Analyzed: 08/21/06				
Sulfate	ND	0.500	mg/L						
Chloride	ND	0.500	"						
LCS (EH62101-BS1)					Prepared & Analyzed: 08/21/06				
Sulfate	8.51	0.500	mg/L	10.0		85.1	80-120		
Chloride	10.0	0.500	"	10.0		100	80-120		
Calibration Check (EH62101-CCV1)					Prepared & Analyzed: 08/21/06				
Sulfate	8.34		mg/L	10.0		83.4	80-120		
Chloride	10.2		"	10.0		102	80-120		
Duplicate (EH62101-DUP1)					Source: 6H18007-01 Prepared & Analyzed: 08/21/06				
Sulfate	76.3	5.00	mg/L		65.9		14.6	20	
Chloride	105	5.00	"		98.9		5.98	20	
Duplicate (EH62101-DUP2)					Source: 6H18013-04 Prepared & Analyzed: 08/21/06				
Sulfate	331	5.00	mg/L		336		1.50	20	
Chloride	138	5.00	"		136		1.46	20	
Matrix Spike (EH62101-MS1)					Source: 6H18007-01 Prepared & Analyzed: 08/21/06				
Sulfate	172	5.00	mg/L	100	65.9	106	80-120		
Chloride	210	5.00	"	100	98.9	111	80-120		
Matrix Spike (EH62101-MS2)					Source: 6H18013-04 Prepared & Analyzed: 08/21/06				
Sulfate	422	5.00	mg/L	100	336	86.0	80-120		
Chloride	224	5.00	"	100	136	88.0	80-120		

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 7 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH62128 - General Preparation (WetChem)										
Blank (EH62128-BLK1)				Prepared & Analyzed: 08/21/06						
Total Alkalinity	ND	2.00	mg/L							
LCS (EH62128-BS1)				Prepared & Analyzed: 08/21/06						
Total Alkalinity	178		mg/L	200		89.0	85-115			
Duplicate (EH62128-DUP1)				Source: 6H18007-01		Prepared & Analyzed: 08/21/06				
Total Alkalinity	186	2.00	mg/L		186			0.00	20	
Reference (EH62128-SRM1)				Prepared & Analyzed: 08/21/06						
Total Alkalinity	248		mg/L	250		99.2	90-110			
Batch EH62303 - Filtration Preparation										
Blank (EH62303-BLK1)				Prepared: 08/18/06 Analyzed: 08/22/06						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (EH62303-DUP1)				Source: 6H18007-01		Prepared: 08/18/06 Analyzed: 08/22/06				
Total Dissolved Solids	556	10.0	mg/L		526			5.55	5	R5
Duplicate (EH62303-DUP2)				Source: 6H18013-04		Prepared: 08/18/06 Analyzed: 08/28/06				
Total Dissolved Solids	878	10.0	mg/L		930			5.75	5	R5

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 8 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Total Metals by EPA / Standard Methods - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EH62313 - 6010B/No Digestion

Blank (EH62313-BLK1)

Prepared & Analyzed: 08/23/06

Calcium	ND	0.0810	mg/L							
Magnesium	ND	0.0360	"							
Potassium	ND	0.0600	"							
Sodium	ND	0.0430	"							

Calibration Check (EH62313-CCV1)

Prepared & Analyzed: 08/23/06

Calcium	1.96		mg/L	2.00		98.0	85-115			
Magnesium	2.01		"	2.00		100	85-115			
Potassium	1.76		"	2.00		88.0	85-115			
Sodium	1.96		"	2.00		98.0	85-115			

Duplicate (EH62313-DUP1)

Source: 6H15005-04

Prepared & Analyzed: 08/23/06

Calcium	44.4	0.810	mg/L		45.9			3.32	20	
Magnesium	48.1	0.360	"		49.3			2.46	20	
Potassium	42.9	0.600	"		42.6			0.702	20	
Sodium	44.4	0.430	"		43.5			2.05	20	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 9 of 10

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: Hobbs I-9 SWD
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Notes and Definitions

RS RPD is outside of historic values
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:

Raland K. Tuttle

Date:

8/29/2006

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

12634 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Kristin Farris Pope kpope@riceswd.com

Company Name RICE Operating Company

Company Address: 122 W. Taylor Street

City/State/Zip: Hobbs, New Mexico 88240

Telephone No: (505) 393-9174

Fax No: (505) 397-1471

Sampler Signature: Rozanne Johnson (505) 631-9310

Email: rozanne@valornet.com

Project Name: Hobbs I-9 SWD

Project #:

Project Loc: Lea County

PO #:

Special Instructions:

PLEASE Email RESULTS TO: kpope@riceswd.com; mfranks@riceswd.com
rozanne@valornet.com

Relinquished by:

Date 8/18/06 Time 5:30

Received by:

Date 8-18-06 Time 5:31

Relinquished by:

Date 8/18/06 Time 10:20

Received by: ELOI

Date 8/18/06 Time 10:20

69818029 10/4/18/06	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Ice	HNO ₃	HCl (2) 40 ml glass vials	NaOH	H ₂ SO ₄	None (1) 1 Liter HDPE	Other (Specify)	Water	Sediment	Soil	Other (specify)	TPH: 418.1 8015M 1005 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , CO ₃ , HCO ₃)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg S	Volatiles	Semivolatiles	BTEX 8021B/5030	RCI	N.O.R.M.	Total Dissolved Solids	RUSH TAT (Pre-Schedule)	Standard TAT	LAB # (lab use only)
																													Monitor Well #1
																													Monitor Well #3
																													Monitor Well #4
																													McNeill Well
																		</											

Sample Containers: Intact? ☒ N
Labels on container? ☒ N
Custody Seals: Containers ☒
Temperature Upon Receipt

Laboratory Comments: 4.0

Environmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Rice DP.
Date/ Time: 8/18/06 10:20
Lab ID #: 6H18013
Initials: OK

Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	Yes	No	4.0 °C
#2	Shipping container in good condition?	Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present
#5	Chain of Custody present?	Yes	No	
#6	Sample instructions complete of Chain of Custody?	Yes	No	
#7	Chain of Custody signed when relinquished/ received?	Yes	No	
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	Yes	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No	
#11	Containers supplied by ELOT?	Yes	No	
#12	Samples in proper container/ bottle?	Yes	No	See Below
#13	Samples properly preserved?	Yes	No	See Below
#14	Sample bottles intact?	Yes	No	
#15	Preservations documented on Chain of Custody?	Yes	No	
#16	Containers documented on Chain of Custody?	Yes	No	
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below
#18	All samples received within sufficient hold time?	Yes	No	See Below
#19	VOC samples have zero headspace?	Yes	No	Not Applicable

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken:

Check all that Apply:

- ☐ See attached e-mail/ fax
☐ Client understands and would like to proceed with analysis
☐ Cooling process had begun shortly after sampling event

ARCADIS

Appendix C

Stage 1 Abatement Report

Junction 1-9 Release Site

Stage 1 Abatement Report (Site Assessment Investigation)

19 July 1999

 **ARCADIS**
Infrastructure, environment, buildings

P R E P A R E D F O R

**Rice Operating Company
Hobbs, New Mexico**

ARCADIS

Junction 1-9 Release Site

**Stage 1 Abatement
Report (Site Assessment
Investigation)**

Prepared for:

**Rice Operating Company
Hobbs, New Mexico**

Prepared by:

**ARCADIS Geraghty & Miller Inc
1030 Andrews Hwy.
Suite 120
Midland
Texas 79701
Tel 915 699 1381
Fax 915 699 1978**

Our Ref.:

MT000591.0001

Date:

19 July 1999

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- A Interim Abatement Communications
- B Boring Lithology Logs
- C Monitor Well Construction Diagrams
- D Laboratory Analytical Results
- E Recovery Well Volumes

1. INTRODUCTION

The subject site is a former pipeline connection point on the Rice Operating Company Hobbs Salt Water Disposal System. The pipeline transports produced water from oil and gas leases to a permitted well for disposal by subsurface injection. The site is located in southwest Hobbs, New Mexico approximately 0.6 miles south of the intersection of Grimes Street and Stanolind Road (NE ¼ of the NE ¼ of Section 4, T19S-R38E, Lea County. (Figure 1).

2. SITE HISTORY

A pipeline leak was discovered and repaired at the subject site on June 5, 1998. Notification of an unauthorized release was submitted to the New Mexico Oil Conservation Division (NMOCD) District I Office located in Hobbs, New Mexico. A Stage I Abatement Plan was submitted to NMOCD on January 19, 1999. Interim abatement site activities including assessment of impacts to soil and groundwater and excavation of impacted soil were conducted during the period of August 24, 1998 to July 7, 1999. Recovery of phase separated hydrocarbons from groundwater has been conducted from January 18 to May 7, 1999. A total of three monitor wells, one recovery well, and nine boreholes wwas installed at the subject site (Figure 2). Correspondence between Rice Operating and the NMOCD is included in Appendix A.

3. GEOLOGY AND HYDROGEOLOGY

The Ogallala Formation is the principal source of groundwater in the subject area. Depth to groundwater in Lea County ranges from approximately 12 feet below ground surface (bgs) to approximately 300 feet bgs. The Ogallala consists of predominantly coarse fluvial conglomerate and sandstone and fine-grained eolian siltstone and clay. Where present in the subject area, the Ogallala unconformably overlies Triassic red-beds. The regional and site groundwater gradient (Figure 3) is to the south/southeast.

Depth to groundwater at the subject site is approximately 31 feet bgs. Groundwater elevations measured in the three monitor wells at the subject site are shown in Table 1.

Subsurface geology in the subject area consists of approximately one foot of light brown, fine-grained, calcareous sand underlain by white to gray caliche to a depth of approximately 15 feet bgs. The caliche is underlain by predominantly gray limestone and silty caliche to a depth of approximately 32 feet and red-brown and light brown to pink fine-grained sand. Boring lithology logs are included in this report in Appendix B.

Rice Operating Company conducted a field search and review of the New Mexico State Engineer water well database. No evidence of impact to surface water bodies was identified. Two stock wells were located near the subject. One well is located approximately 1200 feet northwest of the site and one well is located approximately 3500 feet southeast of the site.

Table 1
GROUNDWATER ELEVATIONS
Junction I-9 Site
HOBBS, NEW MEXICO

MONITORING WELL	TOP OF CASING	DATE	DEPTH TO GROUNDWATER	WATER ELEVATION
	(feet)*		(feet)*	(feet)*
MW-1	99.75	01/12/99	31.75	68.00
MW-1	99.75	01/16/99	32.04	67.71
MW-2	99.96	01/12/99	31.82	68.14
MW-2	99.96	01/16/99	32.04	67.92
MW-3	100	01/12/99	30.58	69.62
MW-3	100	01/16/99	31.85	68.15

* Calculated by Enercon from Rice Operating Company survey plat. Used relative benchmark = 100 feet, top of casing on MW-3.

4. FIELD ACTIVITIES AND METHODOLOGY

Field activities were conducted between of August 12, 1998 through July 7, 1999. Field activities included drilling and soil sampling of nine boreholes, drilling and sampling of three monitor wells, drilling of one recovery well and recovery of phase-separated hydrocarbons from the recovery well. All field activities were performed in accordance with the Stage 1 Abatement Plan (Site Assessment Investigation) as approved by the NMOCD. Photographs of field activities are included in Appendix C.

4.1 Excavation of Soil

Excavation activities were performed at the site between August 24, 1998 and September 21, 1998 to identify the vertical extent of impact. Where excavated, impacted soils were observed to a minimum depth of 16 feet bgs. The soil sample obtained from the deepest point of the excavation exhibited an organic vapor meter (OVM) reading of 264 parts per million (ppm). The area of excavation is shown in Figure 4.

4.2 Installation and Sampling of Boreholes

A total of nine boreholes (B-1 through B-9) was drilled at this location (Figure 2). Boreholes B-1 through B-7 were drilled under the direction of Enercon Services Inc. Borehole lithology descriptions are included in Appendix B. Soil samples were screened in the field for volatile organic compounds (VOCs) using an OVM, and were inspected for the presence of staining or odor. The soil borings encountered groundwater at depths ranging from approximately 31 feet to 33 feet bgs. Borings B-1 and B-2 encountered phase-separated hydrocarbons on top of the groundwater.

A minimum of two soil samples was collected from each of the boreholes and submitted for analysis for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH) using USEPA Method 8021B and 8015B, respectively.

Boreholes B-8 and B-9 were installed under the direction of Rice Operating Company for the purpose of identifying the recovery well location. No soil samples from boreholes B-8 and B-9 were submitted for laboratory analysis.

4.3 Installation and Sampling of Monitor Wells

A total of three monitor wells and one recovery well was installed in the subject area. Monitor well locations are shown in Figure 2.

Monitor wells were constructed using 2-inch inside-diameter Schedule 40 PVC casing. The recovery well was constructed of 4-inch inside-diameter Schedule 40 PVC casing. The wells were constructed with fifteen feet of slotted PVC casing, 10 feet below top of groundwater, and five feet above top of groundwater. The wells were sand-packed with a five-foot bentonite plug placed immediately above the sand pack. The wells were grouted above the bentonite plug with cement containing 3-5% bentonite and completed with a flush mounted cover. Monitor well construction diagrams are included in Appendix D.

Groundwater samples were collected from each of the monitor wells on January 16, 1999 and analyzed for volatile organics, semi-volatile organics, general chemistry and metals using USEPA Methods 8260, 8270 C, 325.3, 4500, 150.1, 120.1, 375.4, 160.1, and 6010B.

MW-1 and MW-2 were resampled on July 7, 1999 to determine if BTEX concentrations were representative of downgradient aquifer conditions. The

groundwater samples were submitted for analysis for BTEX using USEPA Method 8021B.

5. LABORATORY ANALYTICAL RESULTS

5.1 Soil Sample Analytical Results

Soil sample analytical results are summarized in Table 2. Laboratory analytical results are included in Appendix E.

**TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS**

Boring	Depth (feet)	OVM Reading (ppm)	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes mg/kg	TPH mg/kg
B-1	20-20.6	54	0.684	0.759	11.000	21.700	1,070
	28	261	0.285	1.000	9.170	24.600	1,200
	30	195	1.130	1.030	13.800	19.500	1,130
B-2	25-26	274	0.477	0.716	11.300	25.200	520
	30-31	174	<0.050	0.070	0.870	2.510	278
B-3	25	214	<0.200	1.520	6.950	15.900	369
	31-33	8	<0.050	<0.050	<0.050	<0.150	<10
B-4	20	177	<0.050	0.207	0.178	0.764	50
	30	6.2	<0.050	<0.050	<0.050	<0.150	47
B-5	20	174	<0.050	0.288	0.188	0.759	22
	25	81	<0.050	0.268	0.264	0.566	69
	30	28	<0.050	<0.050	<0.050	<0.150	18
B-6	20-21	290	<0.050	1.390	1.440	4.660	71
	25-26	237	0.460	4.260	12.200	26.400	234
	30-31	255	0.581	0.130	2.900	4.170	25
B-7	25-26	125	<0.050	0.100	<0.050	<0.150	106
	30	145	<0.050	0.214	0.865	2.190	10

Benzene concentrations range from not detected to 1.130 milligrams per kilogram (mg/kg). Toluene concentrations range from not detected to 4.260 mg/kg. Ethylbenzene concentrations range from not detected to 13.800 mg/kg. Xylene concentrations range from not detected to 26.400 mg/kg. TPH concentrations (diesel range organics) range from not detected to 1,200 mg/kg.

Boreholes B-8 and B-9 were drilled on January 7, 1998 under the direction of a Rice Operating Company representative to identify the location where a recovery well would

be placed. No soil or groundwater samples were collected for analysis from B-8 and B-9.

All boreholes were plugged to surface with a cement grout containing a minimum of 3-5% bentonite.

5.2 Groundwater Sample Analytical Results

Groundwater analytical results are summarized in Table 3. Laboratory analytical results are included in Appendix E. Groundwater samples were collected from MW-1, MW-2 and MW-3 on January 16, 1999 and analyzed for volatile organics, semi-volatile organics, general chemistry and metals. Groundwater samples were collected from boreholes B-3 and B-4 on October 21, 1998 and analyzed for BTEX, chlorides and TDS. MW-1 and MW-2 were resampled on July 7, 1999 and analyzed for BTEX to identify if BTEX concentrations detected in the January 16, 1999 downgradient samples were representative of aquifer conditions.

Benzene was detected in the samples collected from MW-1 and MW-2 on January 16, 1999 and July 7, 1999 at a concentration of 0.008 milligrams per liter (mg/L), 0.017 mg/L, 0.262 mg/L and 0.289 mg/L, respectively. Benzene was detected in the samples collected from B-3 and B-4 at a concentration of 14.2 mg/L and 0.618 mg/L, respectively. Toluene was detected in the samples collected from MW-1 on July 7, 1999 and B-4 at a concentration of 0.01 mg/L and 0.331 mg/L, respectively. Ethylbenzene was detected in the samples collected from MW-1 and MW-2 on January 16, 1999 and July 7, 1999 at a concentration of 0.032 mg/L, 0.007 mg/L, 0.286 mg/L and 0.061 mg/L, respectively. Ethylbenzene was detected in the samples collected from B-3 and B-4 at a concentration of 1.31 mg/L and 0.182 mg/L, respectively. Xylenes were detected in the samples collected from MW-1 and MW-2 on January 16, 1999 and July 7, 1999 at a concentration of 0.012 mg/L, 0.012 mg/L, 0.131 mg/L, and 0.008 mg/L, respectively. Xylenes were detected in the samples collected from B-3 and B-4 at a concentration of 0.780 mg/L and 0.226 mg/L, respectively. 1,2,4-trimethylbenzene was detected in the January 1999 sample collected from MW-1 at a concentration of 0.007 mg/L. No other organic compounds analyzed for were detected.

Naturally-occurring inorganic analytes (metals, chlorides, pH, sulfate, TDS, calcium, potassium, bicarbonate, manganese and sodium) were detected in the groundwater samples collected from MW-1, MW-2 and MW-3.

6. HEALTH AND SAFETY

All site activities were performed in accordance with Occupational Safety and Health Administration (OSHA) standards. All on-site personnel were required to wear a hard hat, safety glasses and steel-toe shoes during work activities.

7. CONCLUSIONS

7.1 SOIL

The vertical extent of hydrocarbon-impacted soil ranges from approximately 25 to 31 feet bgs. Based on analytical data and field screening (OVM readings, odor and staining) the horizontal extent of hydrocarbon impacted soil has been identified north, south and east of the release site. Delineation of the extent of hydrocarbon-impacted soil to the west will be performed in conjunction with Stage II Abatement activities. Figure 5 is a map of TPH concentrations in soil at a depth of 20-25 feet bgs. If more than one sample was analyzed from this interval (for example 20 feet bgs and 25 feet bgs), the analytical results from the deepest sample were used.

7.2 Groundwater

The regional and site groundwater gradient is to the south/southeast. Depth to groundwater at the subject site is approximately 31 feet bgs.

Phase-separated hydrocarbons were measured in Boreholes B-1 and B-2 and are present in recovery well RW-1. To date, approximately 0.796 gallons of phase-separated hydrocarbons have been removed from RW-1. A summary of recovery volumes is included in Appendix F.

Benzene was detected at a concentration above the New Mexico Water Quality Control Commission (20 NMAC 6.2 3-103) standard of 0.01 mg/L in the sample collected from MW-2 on January 16, the samples collected from MW-1 and MW-2 on July 7, 1999 and the samples collected from B-3 and B-4. Figure 6 is an isopleth map showing benzene concentrations. Because all of the wells/boreholes were not sampled during each sampling event, the highest concentration of benzene detected in each well/borehole was used.

Ethylbenzene and xylenes were detected in the sample collected from B-3 at concentrations above the 20 NMAC 6.2 3-103 standard of 0.75 mg/L and 0.62 mg/L, respectively.

No other organic compounds analyzed were detected above 20 NMAC 6.2 3-103 standards.

Naturally-occurring inorganic analytes (metals, chlorides, pH, sulfate, total dissolved solids, calcium, potassium, bicarbonate, manganese and sodium) were detected in the groundwater samples collected from MW-1, MW-2 and MW-3 on January 16, 1999. Aluminum, iron and manganese were detected in MW-1, MW-2 and MW-3 above 20 NMAC 6.2 3-103 standards of 5.0 mg/L, 1.0 mg/L, and 0.2 mg/L, respectively. Barium was detected above the 20 NMAC 6.2 3-103 standard of 1.0 mg/L in the sample collected from MW-3. Total dissolved solids were detected above the 20 NMAC 6.2 3-103 standard of 1000 mg/L in the samples collected from MW-2 and MW-3 and B-3 and B-4. Chlorides were detected in the sample collected from B-4 above the 20 NMAC 6.2 3-103 standard of 250 mg/L.

No other inorganic compounds analyzed were detected above 20 NMAC 6.2 3-103 standards.

8. RECOMMENDATIONS

Rice Operating Company recommends the drilling of an additional downgradient monitor well to delineate the horizontal extent of benzene concentrations above 20 NMAC 6.2 3-103 standards. Following review of this data and approval by NMOCD that no further assessment activities be performed at the subject site, Rice Operating Company will submit a Stage II Abatement Plan to NMOCD for remedial activities at the site. Remedial activities will likely include continued recovery of phase-separated hydrocarbons, excavation of hydrocarbon-impacted soil and semi-annual monitoring of groundwater.

9. REFERENCES

Groundwater Handbook; United States Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information; 1992

Hydrology and Hydrochemistry of the Ogallala Aquifer, Southern High Plains, Texas Panhandle and Eastern New Mexico; Report Number 177; Bureau of Economic Geology; 1988

ARCADIS

**Stage 1 Abatement
Report (Site Assessment
Investigation)**

Rice Operating
Company
Hobbs, New Mexico

Hydrogeochemistry and Water Resources of the Lower Dockum Group in the Texas
Panhandle and Eastern New Mexico; Report Number 161: Bureau of Economic
Geology; 1986

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart I

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name Date Sampled	MW-1		MW-2		MW-3	B-3	B-4
Compound Name	1/16/99 (mg/L)	7/7/99 (mg/L)	1/16/99 (mg/L)	7/7/99 (mg/L)	1/16/99 (mg/L)	10/21/98 (mg/L)	10/21/98 (mg/L)
VOCs							
Benzene	0.008	0.262	0.017	0.289	ND	14.200	0.618
Bromobenzene	ND	NA	ND	NA	ND	NA	NA
Bromochloromethane	ND	NA	ND	NA	ND	NA	NA
Bromodichloromethane	ND	NA	ND	NA	ND	NA	NA
Bromoform	ND	NA	ND	NA	ND	NA	NA
Bromomethane	ND	NA	ND	NA	ND	NA	NA
n-butylbenzene	ND	NA	ND	NA	ND	NA	NA
sec-butylbenzene	ND	NA	ND	NA	ND	NA	NA
tert-butylbenzene	ND	NA	ND	NA	ND	NA	NA
Carbon tetrachloride	ND	NA	ND	NA	ND	NA	NA
Chlorobenzene	ND	NA	ND	NA	ND	NA	NA
Chlorodibromomethane	ND	NA	ND	NA	ND	NA	NA
Chloroethane	ND	NA	ND	NA	ND	NA	NA
Chloroform	ND	NA	ND	NA	ND	NA	NA
Chloromethane	ND	NA	ND	NA	ND	NA	NA
2-Chlorotoluene	ND	NA	ND	NA	ND	NA	NA
4-Chlorotoluene	ND	NA	ND	NA	ND	NA	NA
1,2-Dibromo-3-chloropropane	ND	NA	ND	NA	ND	NA	NA
1,2-Dibromoethane	ND	NA	ND	NA	ND	NA	NA
Dibromomethane	ND	NA	ND	NA	ND	NA	NA
1,2-Dichlorobenzene	ND	NA	ND	NA	ND	NA	NA
1,3-Dichlorobenzene	ND	NA	ND	NA	ND	NA	NA
1,4-Dichlorobenzene	ND	NA	ND	NA	ND	NA	NA
Dichlorodifluoromethane	ND	NA	ND	NA	ND	NA	NA
1,1-Dichloroethane	ND	NA	ND	NA	ND	NA	NA
1,2-Dichlorethane	ND	NA	ND	NA	ND	NA	NA
1,1-Dichloroethene	ND	NA	ND	NA	ND	NA	NA
cis-1,2-dichloroethene	ND	NA	ND	NA	ND	NA	NA
trans-1,2-dichloroethene	ND	NA	ND	NA	ND	NA	NA
1,2-Dichloropropane	ND	NA	ND	NA	ND	NA	NA
1,3-Dichloropropane	ND	NA	ND	NA	ND	NA	NA
2,2-Dichloropropane	ND	NA	ND	NA	ND	NA	NA
1,1-Dichloropropene	ND	NA	ND	NA	ND	NA	NA
Ethylbenzene	0.032	0.286	0.007	0.061	ND	1.310	0.182
Hexachlorobutadiene	ND	NA	ND	NA	ND	NA	NA
Isopropylbenzene	ND	NA	ND	NA	ND	NA	NA
p-isopropyltoluene	ND	NA	ND	NA	ND	NA	NA
Methylene chloride	ND	NA	ND	NA	ND	NA	NA
Naphthalene	ND	NA	ND	NA	ND	NA	NA
n-propylbenzene	ND	NA	ND	NA	ND	NA	NA
Styrene	ND	NA	ND	NA	ND	NA	NA
1,1,1,2-Tetrachloroethane	ND	NA	ND	NA	ND	NA	NA
1,1,2,2-Tetrachloroethane	ND	NA	ND	NA	ND	NA	NA
Tetrachloroethene	ND	NA	ND	NA	ND	NA	NA

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name Date Sampled	MW-1		MW-2		MW-3	B-3	B-4
Compound Name	1/16/99 (mg/L)	7/7/99 (mg/L)	1/16/99 (mg/L)	7/7/99 (mg/L)	1/16/99 (mg/L)	10/21/98 (mg/L)	10/21/98 (mg/L)
Toluene	ND	0.01	ND	<0.005	ND	<0.050	0.331
1,2,3-Trichlorobenzene	ND	NA	ND	NA	ND	NA	NA
1,2,4-Trichlorobenzene	ND	NA	ND	NA	ND	NA	NA
1,1,1-Trichloroethane	ND	NA	ND	NA	ND	NA	NA
1,1,2-Trichloroethane	ND	NA	ND	NA	ND	NA	NA
Trichloroethene	ND	NA	ND	NA	ND	NA	NA
Trichlorofluoromethane	ND	NA	ND	NA	ND	NA	NA
1,2,3-Trichloropropane	ND	NA	ND	NA	ND	NA	NA
1,2,4-Trimethylbenzene	0.007	NA	ND	NA	ND	NA	NA
1,3,5-Trimethylbenzene	ND	NA	ND	NA	ND	NA	NA
Vinyl chloride	ND	NA	ND	NA	ND	NA	NA
Xylenes, total	0.012	0.131	0.012	0.008	ND	0.78	0.226
Acetone	ND	NA	ND	NA	ND	NA	NA
Carbon disulfide	ND	NA	ND	NA	ND	NA	NA
Vinyl acetate	ND	NA	ND	NA	ND	NA	NA
2-Butanone	ND	NA	ND	NA	ND	NA	NA
1,2-Dichloroethene	ND	NA	ND	NA	ND	NA	NA
2-Chloroethylvinylether	ND	NA	ND	NA	ND	NA	NA
4-Methyl-2-pentanone	ND	NA	ND	NA	ND	NA	NA
cis-1,3-dichloropropene	ND	NA	ND	NA	ND	NA	NA
trans-1,3-dichloropropene	ND	NA	ND	NA	ND	NA	NA
2-Hexanone	ND	NA	ND	NA	ND	NA	NA
Methyl tert butyl ether	ND	NA	ND	NA	ND	NA	NA
SVOCs							
Acenaphthene	ND	NA	ND	NA	ND	NA	NA
Acenaphthylene	ND	NA	ND	NA	ND	NA	NA
Aniline	ND	NA	ND	NA	ND	NA	NA
Anthracene	ND	NA	ND	NA	ND	NA	NA
Benzo(a)anthracene	ND	NA	ND	NA	ND	NA	NA
Benzo(b)fluoranthene	ND	NA	ND	NA	ND	NA	NA
Benzo(k)fluoranthene	ND	NA	ND	NA	ND	NA	NA
Benzo(a)pyrene	ND	NA	ND	NA	ND	NA	NA
Benzoic acid	ND	NA	ND	NA	ND	NA	NA
Benzo(g,h,i)perylene	ND	NA	ND	NA	ND	NA	NA
Benzyl alcohol	ND	NA	ND	NA	ND	NA	NA
4-Bromophenylphenyl ether	ND	NA	ND	NA	ND	NA	NA
Butylbenzylphthalate	ND	NA	ND	NA	ND	NA	NA
di-n-butyl phthalate	ND	NA	ND	NA	ND	NA	NA
Carbazole	ND	NA	ND	NA	ND	NA	NA
4-Chloroaniline	ND	NA	ND	NA	ND	NA	NA
bis(2-chloroethoxy)methane	ND	NA	ND	NA	ND	NA	NA
bis(2-chloroethyl)ether	ND	NA	ND	NA	ND	NA	NA
bis(2-chloroisopropyl)ether	ND	NA	ND	NA	ND	NA	NA
4-Chloro-3-methylphenol	ND	NA	ND	NA	ND	NA	NA

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name Date Sampled	MW-1		MW-2		MW-3	B-3	B-4
Compound Name	1/16/99 (mg/L)	7/7/99 (mg/L)	1/16/99 (mg/L)	7/7/99 (mg/L)	1/16/99 (mg/L)	10/21/98 (mg/L)	10/21/98 (mg/L)
2-Chloronaphthalene	ND	NA	ND	NA	ND	NA	NA
2-Chlorophenol	ND	NA	ND	NA	ND	NA	NA
4-Chlorophenylphenyl ether	ND	NA	ND	NA	ND	NA	NA
Chrysene	ND	NA	ND	NA	ND	NA	NA
Dibenz(a,h)anthracene	ND	NA	ND	NA	ND	NA	NA
Dibenzofuran	ND	NA	ND	NA	ND	NA	NA
1,2-Dichlorobenzene	ND	NA	ND	NA	ND	NA	NA
1,3-Dichlorobenzene	ND	NA	ND	NA	ND	NA	NA
1,4-Dichlorobenzene	ND	NA	ND	NA	ND	NA	NA
3,3-Dichlorobenzidine	ND	NA	ND	NA	ND	NA	NA
2,4-Dichlorophenol	ND	NA	ND	NA	ND	NA	NA
Diethylphthalate	ND	NA	ND	NA	ND	NA	NA
2,4-Dimethylphenol	ND	NA	ND	NA	ND	NA	NA
Dimethyl phthalate	ND	NA	ND	NA	ND	NA	NA
4,6-Dinitro-2-methylphenol	ND	NA	ND	NA	ND	NA	NA
2,4-Dinitrophenol	ND	NA	ND	NA	ND	NA	NA
2,4-Dinitrotoluene	ND	NA	ND	NA	ND	NA	NA
2,6-Dinitrotoluene	ND	NA	ND	NA	ND	NA	NA
1,2-Diphenylhydrazine	ND	NA	ND	NA	ND	NA	NA
bis(2-ethylhexyl)phthalate	ND	NA	ND	NA	ND	NA	NA
Fluoranthene	ND	NA	ND	NA	ND	NA	NA
Fluorene	ND	NA	ND	NA	ND	NA	NA
Hexachlorobenzene	ND	NA	ND	NA	ND	NA	NA
Hexachlorobutadiene	ND	NA	ND	NA	ND	NA	NA
Hexachloroethane	ND	NA	ND	NA	ND	NA	NA
Hexachlorocyclopehtadiene	ND	NA	ND	NA	ND	NA	NA
Indeno(1,2,3-cd)pyrene	ND	NA	ND	NA	ND	NA	NA
Isophorone	ND	NA	ND	NA	ND	NA	NA
2-Methylnaphthalene	ND	NA	ND	NA	ND	NA	NA
2-Methylphenol	ND	NA	ND	NA	ND	NA	NA
4-Methylphenol	ND	NA	ND	NA	ND	NA	NA
Naphthalene	ND	NA	ND	NA	ND	NA	NA
2-Nitroaniline	ND	NA	ND	NA	ND	NA	NA
3-Nitroaniline	ND	NA	ND	NA	ND	NA	NA
4-Nitroaniline	ND	NA	ND	NA	ND	NA	NA
Nitrobenzene	ND	NA	ND	NA	ND	NA	NA
2-Nitrophenol	ND	NA	ND	NA	ND	NA	NA
4-Nitrophenol	ND	NA	ND	NA	ND	NA	NA
N-nitrosodiphenylamine	ND	NA	ND	NA	ND	NA	NA
N-nitroso-di-n-propylamine	ND	NA	ND	NA	ND	NA	NA
Di-n-octyl phthalate	ND	NA	ND	NA	ND	NA	NA
Pentachlorophenol	ND	NA	ND	NA	ND	NA	NA
Phenanthrene	ND	NA	ND	NA	ND	NA	NA
Phenol	ND	NA	ND	NA	ND	NA	NA
Pyrene	ND	NA	ND	NA	ND	NA	NA

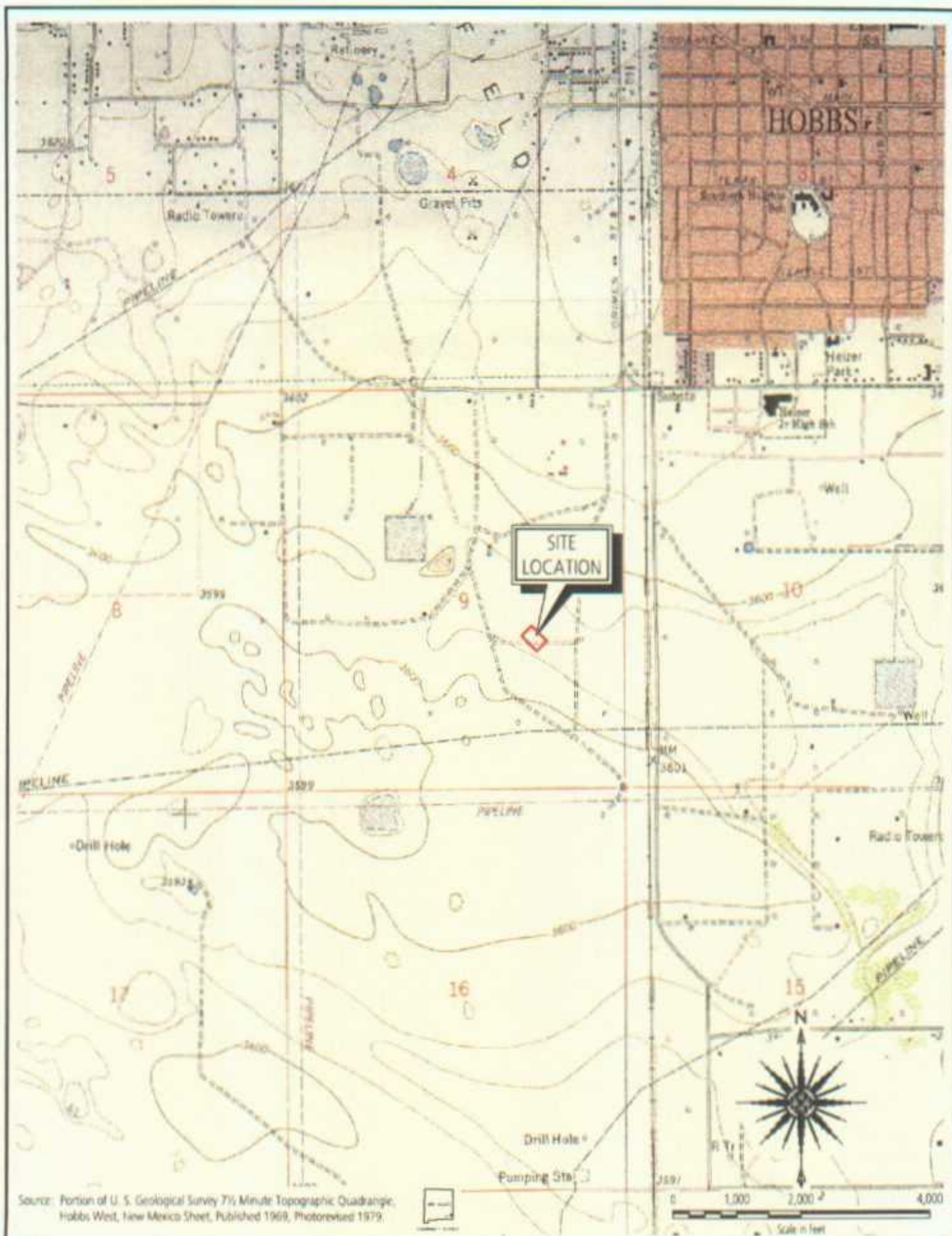
TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name Date Sampled	MW-1		MW-2		MW-3	B-3	B-4
Compound Name	1/16/99 (mg/L)	7/7/99 (mg/L)	1/16/99 (mg/L)	7/7/99 (mg/L)	1/16/99 (mg/L)	10/21/98 (mg/L)	10/21/98 (mg/L)
Pyridine	ND	NA	ND	NA	ND	NA	NA
1,2,4-Trichlorobenzene	ND	NA	ND	NA	ND	NA	NA
2,4,5-Trichlorophenol	ND	NA	ND	NA	ND	NA	NA
2,4,6-Trichlorophenol	ND	NA	ND	NA	ND	NA	NA
General Chemistry							
Resistivity	0.74	NA	0.58	NA	0.53	NA	NA
Specific Gravity	0.982	NA	0.985	NA	0.996	NA	NA
Chloride	128	NA	230	NA	195	230	2400
Carbonate (CaCO ₃)	ND	NA	ND	NA	ND	NA	NA
Bicarbonate (CaCO ₃)	332	NA	322	NA	370	NA	NA
pH	7.29	NA	7.51	NA	7.51	NA	NA
Sulfate	318	NA	372	NA	483	NA	NA
Total dissolved solids	890	NA	1190	NA	1340	1710	5460
Calcium	727	NA	578	NA	1255	NA	NA
Potassium	3	NA	30	NA	8	NA	NA
Sodium	144	NA	171	NA	310	NA	NA
Metals							
Silver	ND	NA	ND	NA	ND	NA	NA
Aluminum	12.3	NA	16.5	NA	32.7	NA	NA
Arsenic	0.019	NA	0.025	NA	0.028	NA	NA
Barium	0.87	NA	0.970	NA	3.91	NA	NA
Cadmium	ND	NA	ND	NA	ND	NA	NA
Cobalt	ND	NA	ND	NA	ND	NA	NA
Chromium	ND	NA	0.02	NA	0.03	NA	NA
Copper	0.02	NA	0.02	NA	0.02	NA	NA
Iron	9.34	NA	11.6	NA	26.4	NA	NA
Mercury	ND	NA	ND	NA	ND	NA	NA
Manganese	0.214	NA	0.288	NA	0.535	NA	NA
Molybdenum	ND	NA	ND	NA	0.03	NA	NA
Nickel	0.02	NA	ND	NA	0.05	NA	NA
Lead	0.005	NA	0.007	NA	0.013	NA	NA
Selenium	ND	NA	ND	NA	ND	NA	NA
Zinc	0.05	NA	0.04	NA	0.04	NA	NA

All results are reported in milligrams per liter (mg/L)

NA - Not analyzed

ND - Not detected



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ARCADIS GERAGHTY & MILLER

1010 Andrews Highway Suite 120, Midland, TX 79701-1872 Tel: 815/699-1381 Fax: 815/699-1978



DATE
REV 15, 1999

COMPILED
S. HALL

PROJECT MANAGER
S. HALL

REGIONAL MANAGER
A. SCHWARTZ

RACE OPERATING COMPANY
JUNCTION 1-9 RELEASE BTL ON T-100-438, HOBBS AND SYSTEM ABANDON

FILE NAME
MT000591.0001

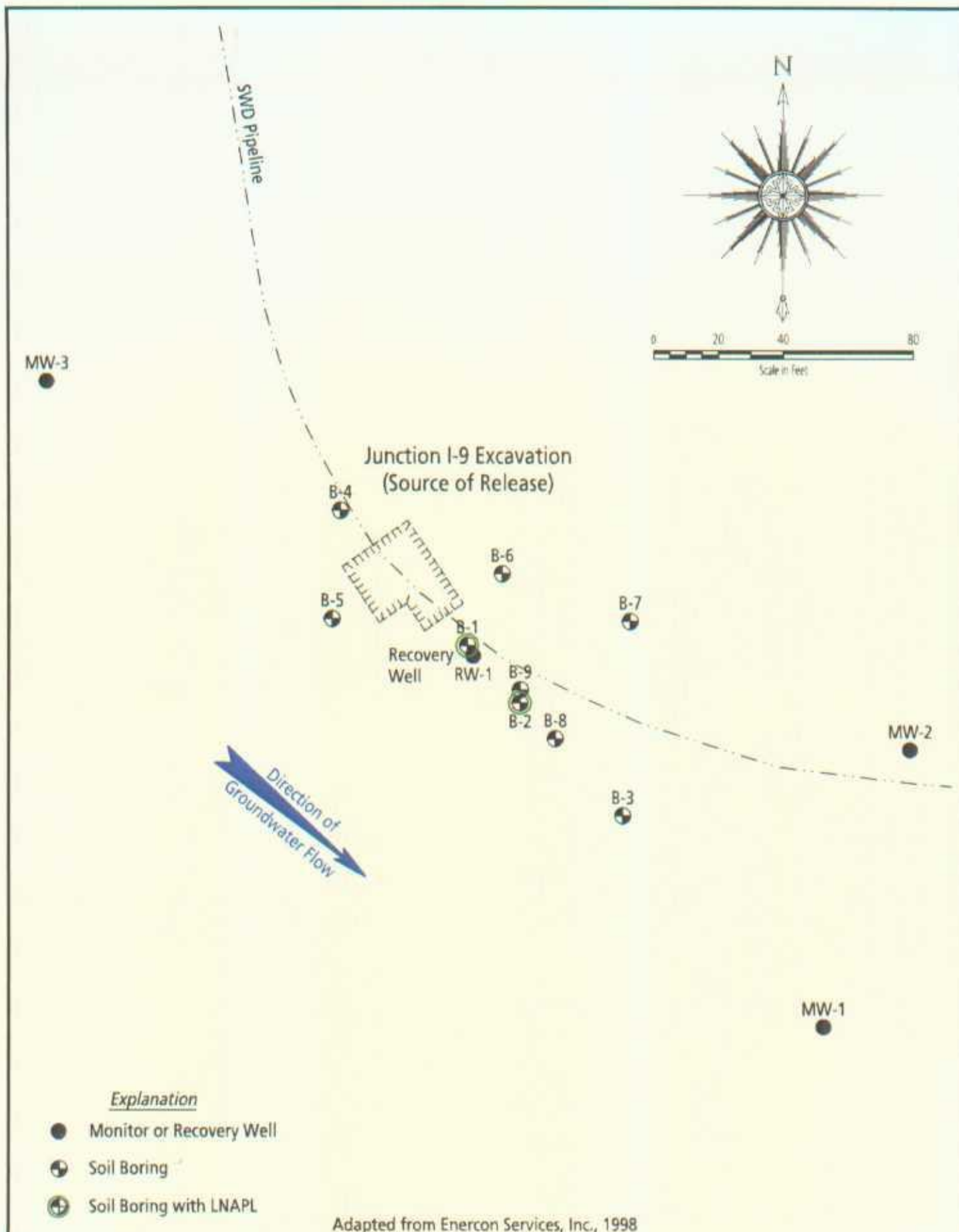
UNIQUE NUMBER
33-014-00290

SITE LOCATION MAP

PROJECT NUMBER
MT000591.0001

FIGURE
1

LEA COUNTY, NEW MEXICO



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1030 Andrews Highway Suite 120, Midland, TX 79701-3872 Tel: 915/699-1381 Fax: 915/699-1978



DATE
JULY 15, 1999

COMPILER
S. HALL

PROJECT MANAGER
S. HALL

REGIONAL MANAGER
A. SCHMIDT

RICE OPERATING COMPANY
JUNCTION I-9 RELEASE SITE, 09-TX35-R38E, HOBBS SMD SYSTEM ABATEMENT

FILE NAME
MT191102.DWG

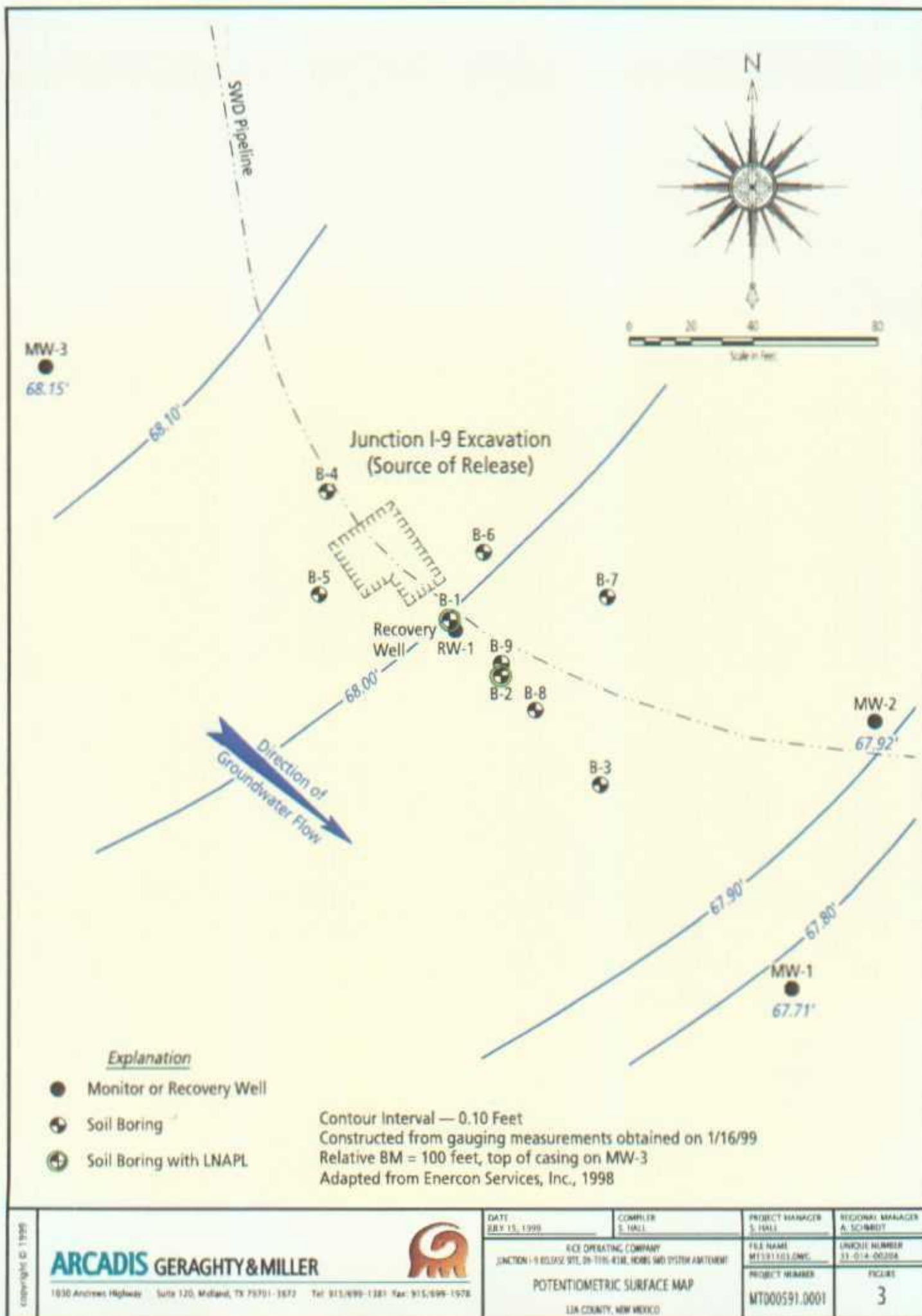
UNIQUE NUMBER
31-014-00207

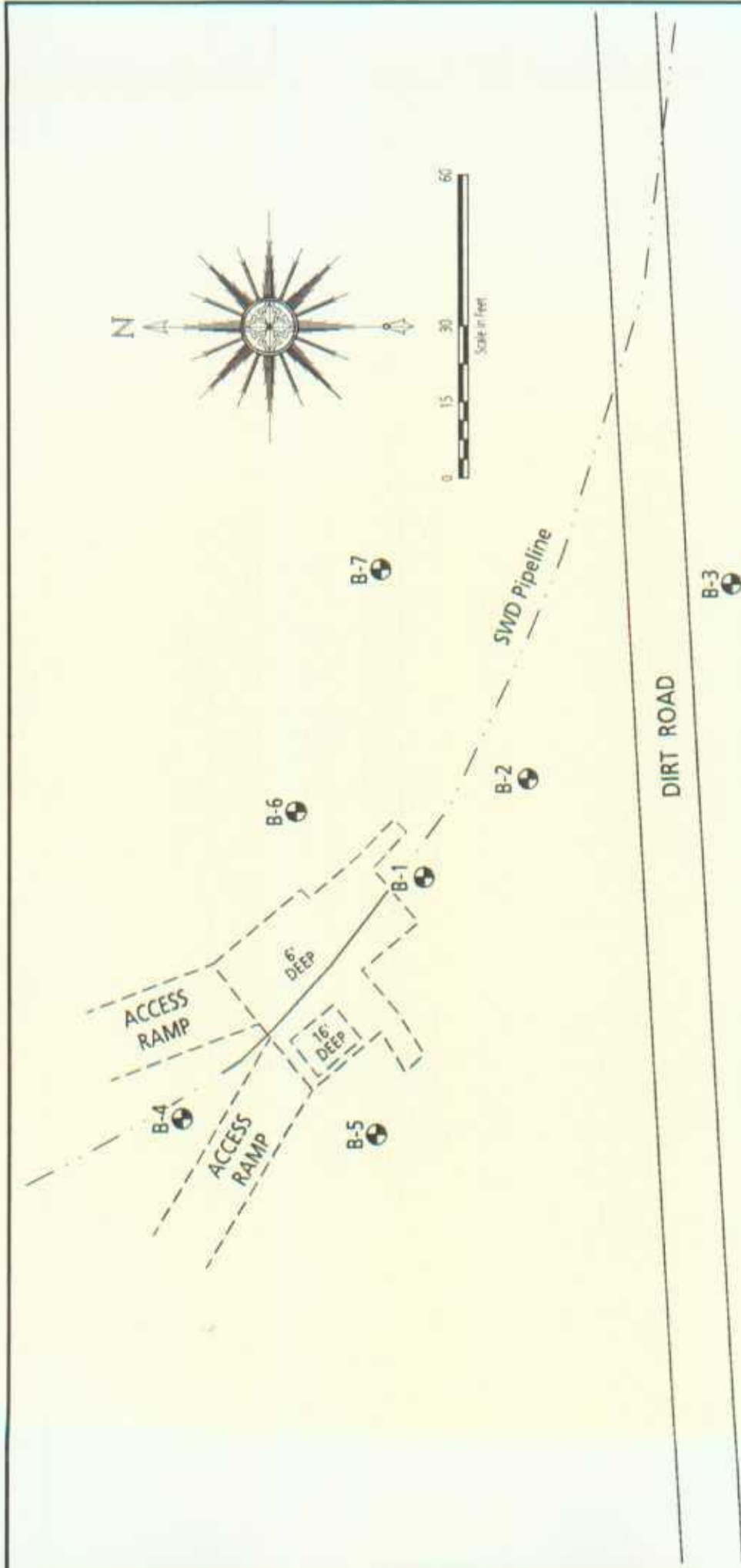
MONITOR WELL AND BORING LOCATIONS

PROJECT NUMBER
MT000591.0001

FIGURE
2

LEA COUNTY, NEW MEXICO





Explanation

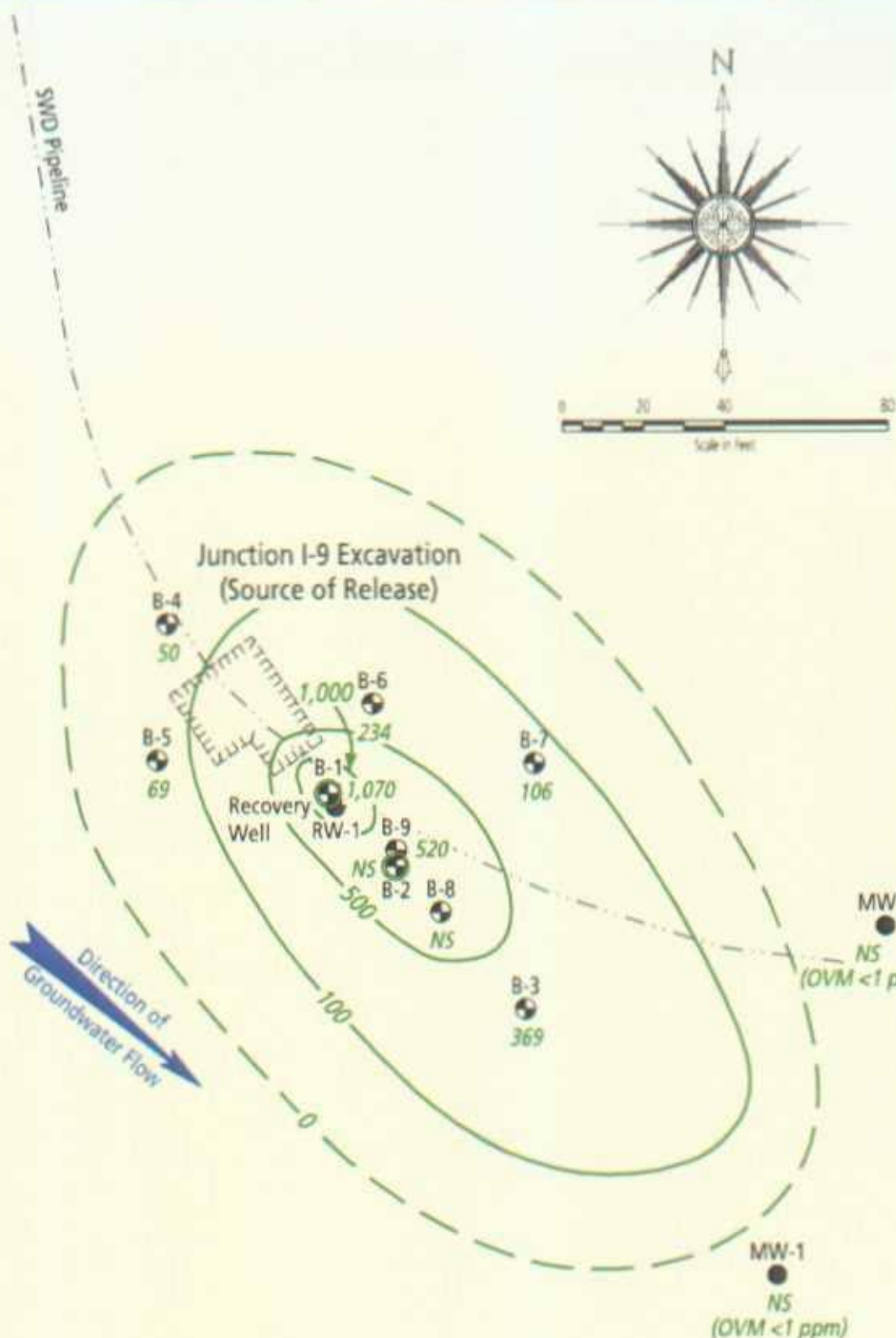
Excavation

Soil Boring

— Pipeline (underground)

Adapted from Enercon Services, Inc., 1998

MW-3



Explanation

- Monitor or Recovery Well
- ⊕ Soil Boring
- ⊕ Soil Boring with LNAPL
- NS Not Sampled

Concentrations in milligrams per kilogram (mg/kg)
Adapted from Enercon Services, Inc., 1998

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ARCADIS GERAGHTY & MILLER

1050 Andrews Highway Suite 120, Milledgeville, GA 30451-1872 Tel: 913/699-1381 Fax: 913/699-1878



DATE SEP 15, 1999	COMPILED J. HALL	PROJECT MANAGER A. SCHWAB	REGIONAL MANAGER A. SCHWAB
SIC OPERATING COMPANY JUNCTION I-9 EXCAVATION SITE, IN THE EAST, NEAR THE DITCH AREA TOTAL PETROLEUM HYDROCARBON CONCENTRATIONS IN SOIL 20-25 FEET BELOW GROUND SURFACE LRA COUNTY, NEW MEXICO		FILE NAME MTD00591.DWG	UNIQUE NUMBER 31-014-00210
		PROJECT NUMBER MTD00591.0001	FIGURE 5

MW-3
ND

SWD Pipeline

Junction I-9 Excavation
(Source of Release)

B-4
0.618

B-5

Recovery
Well
RW-1

B-1

B-9

B-2

B-8

B-6

B-7

B-3
14.2

MW-2
0.289

MW-1
0.262

Direction of
Groundwater Flow

Explanation

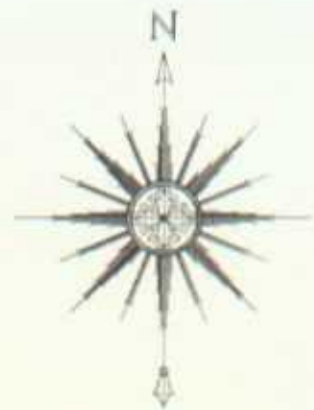
- Monitor or Recovery Well
- ⊕ Soil Boring
- ⊕ Soil Boring with LNAPL
- ND Not Detected

Sample Date:

MW-1 and MW-2 — 7/7/99
MW-3 — 1/16/99
B-3 and B-4 — 10/21/98

Concentrations in milligrams per kilogram (mg/kg)

Adapted from Enercon Services, Inc., 1998



0 20 40 80
Scale in feet

ARCADIS GERAGHTY & MILLER

1010 Andrews Highway Suite 120, Midland, TX 79701-3872 Tel: 915/699-1341 Fax: 915/699-1978



DATE
JULY 15, 1999

COMPILED
S. HALL

PROJECT MANAGER
S. HALL

REGIONAL MANAGER
A. SCHMIDT

CLIENT OPERATING COMPANY
JUNCTION I-9 RELEASE SITE, 20-TONS BUREAU SWD DISTRICT

FILE NAME
MTS11106.DWG

UNIQUE NUMBER
21-014-00211

HIGHEST BENZENE CONCENTRATIONS IN GROUNDWATER

PROJECT NUMBER
MT000591.0001

FIGURE
6

USA COUNTY, NEW MEXICO

APPENDIX A

INTERIM ABATEMENT COMMUNICATIONS

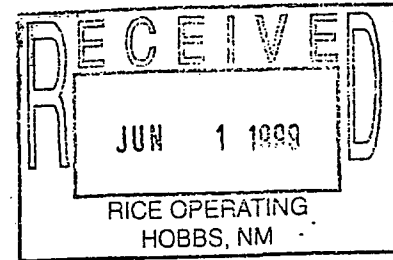


NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

May 24, 1999

CERTIFIED MAIL
RETURN RECEIPT NO: Z 357 870 129



Carolyn Doran Haynes
Operations Engineer
Rice Operating Company
122 West Taylor
Hobbs, New Mexico 88240

**RE: Stage 1 Abatement Plan
Junction I-9 Release Site
NE 1/4 SE 1/4 Section 09-Ts19s-R38e
Hobbs Salt Water Disposal System
Lea County, New Mexico**

Dear Ms. Haynes:

The New Mexico Oil Conservation Division (NMOCD) is in receipt of Rice Operating Company's (ROC) letter dated April 23, 1999 concerning public notice requirements for the above captioned Stage 1 Abatement Plan. As of this date, NMOCD has not received any response to the public notices issued. The interim investigation and remediation activities conducted to date are satisfactory and the Stage 1 Abatement Plan i.e. (Investigation Plan) submitted on January 19, 1999 is hereby approved with the following conditions:

1. All final soil samples submitted for laboratory analyses shall be sampled for BTEX (8021), TPH (418.1 or 8015 GRO & DRO) and Chlorides.
2. ROC shall complete the new monitor well(s) as follows:
 - a. At least 15 feet of well screen shall be placed across the water table interface with 5 feet of the well screen above the water table and 10 feet of the well screen below the water table.
 - b. An appropriately sized gravel pack shall be set in the annulus around the well screen from the bottom of the hole to 2-3 feet above the top of the well screen.
 - c. A 2-3 foot bentonite plug shall be placed above the gravel pack.
 - d. The remainder of the hole shall be grouted to the surface with cement containing 3-5% bentonite.
 - e. A concrete pad shall be placed at the surface around the well. The well shall be installed with a suitable protective locking device.
 - f. The well(s) shall be developed after construction using EPA approved procedures.

3. No less than 48 hours after the well(s) are developed, ground water from all monitor well(s) shall be purged, sampled and analyzed for concentrations of benzene, toluene, ethylbenzene, xylene, polycyclic aromatic hydrocarbons (PAH), total dissolved solids (TDS) and New Mexico Water Quality Control Commission (WQCC) metals and major cations and anions using EPA approved methods and quality assurance/quality control (QA/QC) procedures.
4. All wastes generated during the investigation shall be disposed of at an OCD approved facility.
5. ROC shall submit the results of the investigation to the OCD Santa Fe Office by July 23, 1999 with a copy provided to the OCD Hobbs District Office and shall include the following investigative information:
 - a. A description of all investigation, remediation and monitoring activities which have occurred including conclusions and recommendations.
 - b. A geologic/lithologic log and well completion diagram for each monitor well.
 - c. A water table potentiometric map showing the location of the leaks and spills, excavated areas, monitor wells, and any other pertinent site features as well as the direction and magnitude of the hydraulic gradient.
 - d. Isopleth maps for contaminants of concern which were observed during the investigations.
 - e. Summary tables of all ground water quality sampling results and copies of all laboratory analytical data sheets and associated QA/QC data taken within the past year.
 - f. The quantity and disposition of all recovered product and/or wastes generated.
6. ROC will notify the OCD Santa Fe office and the OCD District office at least 48 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.

Please be advised that NMOCD approval of this plan does not relieve ROC of liability should their investigations and/or operations fail to adequately investigate and/or remediate contamination that poses a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve ROC of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you have any questions, please contact Wayne Price of my staff at (505) 827-7155.

Sincerely,



Roger C. Anderson
Environmental Bureau Chief

RCA/wp

cc: OCD Hobbs Office
Bill McNeil-Landowner

RICE Operating Company

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

CERTIFIED MAIL

RETURN RECEIPT NO: P 622 726 279

January 19, 1999

Mr. Wayne Price
New Mexico Energy and Minerals Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

**Re: Stage I Abatement Plan
 Junction I-9 Release Site
 Unit Letter I, Section 9 of T19S R38E
 Hobbs Salt Water Disposal System
 Lea County, New Mexico**

Mr. Price:

Enclosed is the Stage I Abatement Plan required by your letter dated December 17, 1998. I have also enclosed a draft Notice of Publication. Within 15 days after the New Mexico Oil Conservation Division (OCD) determines that the Stage I Abatement Plan is administratively complete, Rice Operating Company will issue public notice in a form approved by OCD in a newspaper of general circulation in the county in which the release occurred, and in a newspaper of general circulation in the State. Prior to public notice, Rice shall give written notice, as approved by the OCD, of this Stage I Abatement Plan to the following persons:

- Surface owners of record within 1 mile of the perimeter of the geographic area where the standards and requirements are exceeded.
- The County Commission for the geographic area where the standards and requirements are exceeded is located.
- The appropriate city official(s) for the geographic area where the standards and requirements are exceeded is located.

- Those persons, as identified by the Director, who have requested notification.
- The New Mexico Trustee for Natural Resources, and any other local, state, or federal governmental agency affected, as identified by the Director, which shall be notified by certified mail.
- The appropriate Governor or President of any Indian Tribe, Pueblo or Nation if the geographic area where the standards and requirements are exceeded is located or partially located within tribal boundaries or within 1 mile of the tribal boundaries, who shall be notified by certified mail.

Please contact me at (505) 393-9174 with your comments or suggested changes.

Sincerely,



F. Wesley Root
Projects Manager

Enclosure: Notice of Publication

Cc. Mr. Chris Williams, NMOCD District I Office
Mr. Loy Goodheart, Rice Operating Company
Mr. Ken Hasten, Rice Operating Company
File

NOTICE OF PUBLICATION

**State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division**

Notice is hereby given that pursuant to New Mexico Oil Conservation Division Regulations, the following Stage I Abatement Plan has been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

Rice Operating Company, F. Wesley Root (505) 393-9174, 122 West Taylor, Hobbs, New Mexico 88240, has submitted a Stage I Abatement Plan Proposal for Pipeline Junction I-9, Hobbs Salt Water Disposal System, 0.6 miles southwest of Hobbs in the NE/4, SE/4 of Section 09, Township 19 South, Range 38 East, Lea County, New Mexico. The site is approximately one acre where Rice Operating Company operates a saltwater disposal pipeline. Light Non-Aqueous Phase Liquid (LNAPL) has been observed on the ground water. The Stage I Abatement Plan presents the following subsurface investigation activities: determine site geology and hydrogeology, and physical properties of the aquifer; conduct a registered water well search within a one mile radius of the site; installation of monitoring wells to delineate impact at the site; collect soil and groundwater samples for laboratory analysis from each monitor well to determine the magnitude of impact to ground water; survey all well locations to establish a relative datum; obtain depth to ground water measurements; calculate the ground water gradient and flow direction; and prepare a report summarizing field activities and laboratory results.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The Stage I Abatement Plan may be viewed at the above address or at the Oil Conservation Division District Office, 1000 West Broadway, Hobbs, New Mexico 88240, Telephone (505) 392-4046, between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed Stage I Abatement Plan, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him.

RICE Operating Company

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

April 23, 1999

Mr. Wayne Price
NM Energy, Minerals, and Natural Resources Department
Oil Conservation Division, Environmental Bureau
2040 S. Pacheco
Santa Fe, NM 87505

**RE: Stage I Abatement Plan
 Junction I-9 Release Site
 Unit Letter I, Section 9 of T19S, R38E
 Hobbs Salt Water Disposal System
 Lea County, New Mexico**

Mr. Price:

Attached please find the proof of notification for Rice Operating Company's Stage I Abatement Plan for the junction I-9 Release Site. Included in this package are the affidavits of publication from the three newspapers that were required: Albuquerque Journal, Hobbs News Sun, Lovington Daily Leader; copies of the certified mail return cards from the notification mailed to owners of record within one mile radius of the site; and copies of the certified mail return cards from the notification mailed to "those persons as identified by the Director, who have requested notification."

The public notice was published in these three newspapers on April 9, 1999. It is understood that there is a 30-day waiting period for public comment, and that after the 30 days, the Stage I Abatement Plan will be reviewed for approval or approval with conditions. Rice Operating Company will expect to hear from you the week of May 10, 1999.

Sincerely,



Carolyn Doran Haynes
Operations Engineer

Attachment

Cc: KH, JC, LG, file, Mr. Chris Williams, OCD Hobbs District Office

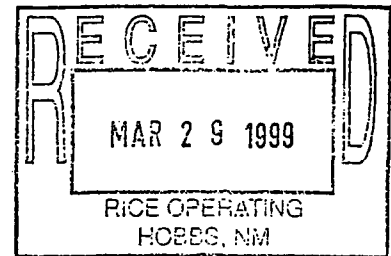


**NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT**

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87506
(505) 827-7131

March 25, 1999

CERTIFIED MAIL
RETURN RECEIPT NO: Z 357 870 113



Carolyn Doran Haynes
Operations Engineer
Rice Operating Company
122 West Taylor
Hobbs, New Mexico 88240

**RE: Stage I Abatement Plan
Junction I-9 Release Site
NE 1/4 SE 1/4 Section 09-Ts19s-R38e
Hobbs Salt Water Disposal System
Lea County, New Mexico**

Dear Ms. Haynes:

The New Mexico Oil Conservation Division (OCD) has reviewed Rice Operating Company's (ROC) January 19, 1999 Stage I Abatement Plan for the above referenced site. This document contains ROC's Stage 1 Abatement Plan Proposal for investigating ground water contamination resulting from a salt water disposal pipeline spill at ROC's Junction I-9 Release site.

The OCD has determined that the Stage 1 Abatement Plan Proposal is administratively complete. Before the OCD can issue approval of the Stage 1 proposal, the OCD requires that:

1. ROC issue by April 9, 1999 the attached public notice of the Stage 1 proposal in the Albuquerque Journal, Hobbs News Sun and the Lovington Daily Leader pursuant to OCD Rule 19.G.(2).
2. Prior to issuing the public notice, ROC will also issue written notice of the Stage 1 proposal pursuant to OCD Rule 19.G.(1). For written notification of "those persons, as identified by the Director, who have requested notification" pursuant to OCD Rule 19.G.(1).(d), enclosed you will find a 3.5" disk containing a "WordPerfect" listing of those persons.

Please provide the OCD with proof of notice upon completing issuance of the written and public notice. If you have any questions, please contact Wayne Price of my staff at (505) 827-7155.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

xc: Chris Williams, OCD Hobbs District Office
Bill McNeill- Landowner

NOTICE OF PUBLICATION

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Oil Conservation Division Regulations, the following Stage 1 Abatement Plan Proposal has been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

Rice Operating Company, Carolyn Doran Haynes, Operations Engineer, Telephone (505) 393-9174, 122 West Taylor, Hobbs, New Mexico 88240, has submitted a Stage 1 Abatement Plan Proposal for the Pipeline Junction I-9, Hobbs Salt Water Disposal System, located approximately .6 miles southwest of Hobbs, NM in the NE 1/4, SE 1/4 of Section 09, Township 19 South, Range 38 East, NMPM, Lea County, New Mexico. Rice Operating Company operates a salt water disposal pipeline at the site. Phase-separated hydrocarbon (PSH) has been observed on the ground water. The Stage 1 Abatement Plan Proposal presents the following subsurface investigation activities: determine site geology and hydrogeology; conduct a registered water well search within a 1 mile radius of the site; install a minimum of 3 monitoring wells; if necessary, install additional wells; collect soil samples for field screening and/or laboratory analysis from each boring; collect ground water samples for laboratory analysis from each monitoring well; obtain depth to ground water measurements and calculate the ground water gradient and direction; survey all well locations by a professional land surveyor registered in the State of New Mexico; and prepare a report summarizing field activities and laboratory results.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The Stage 1 Abatement Plan Proposal may be viewed at the above address or at the Oil Conservation Division Hobbs District Office, 1625 N. French Drive, Hobbs, New Mexico 88240, Telephone (505) 393-6161 between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed Stage 1 Abatement Plan Proposal, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which written comments may be submitted.

122 West Taylor, Hobbs NM
phone: (505) 393-9174
fax: (505) 397-1471

Rice Operating Company

Fax

To: Mr. Chris Williams

From: F. Wesley Root

NMOCD District I Office

Fax: (505) 393-0720

Pages 1

Phone (505) 393-6161

Date: 01/14/99

Re: Interim Abatement

CC: Mr. Roger Anderson / Wayne Price

Jct I-9, 09-T19S-R38E

NMOCD Environmental Bureau

Lea County, NM

NMOCD Santa Fe Office

● **Comments:** 48 hour Ground Water Sampling Notification.

The three monitor wells installed on January 7 and 8, 1999 at the above listed site will be sampled by an independent contractor on January 16, 1999. Sampling will be conducted pursuant to item 4 of the NMOCD abatement approval letter dated December 17, 1998 with the following exception. A separate PAH analysis will not be performed since PAH compounds will be included in the volatile and semi-volatile analysis.

F. Wesley Root

TRANSACTION REPORT

Transmission

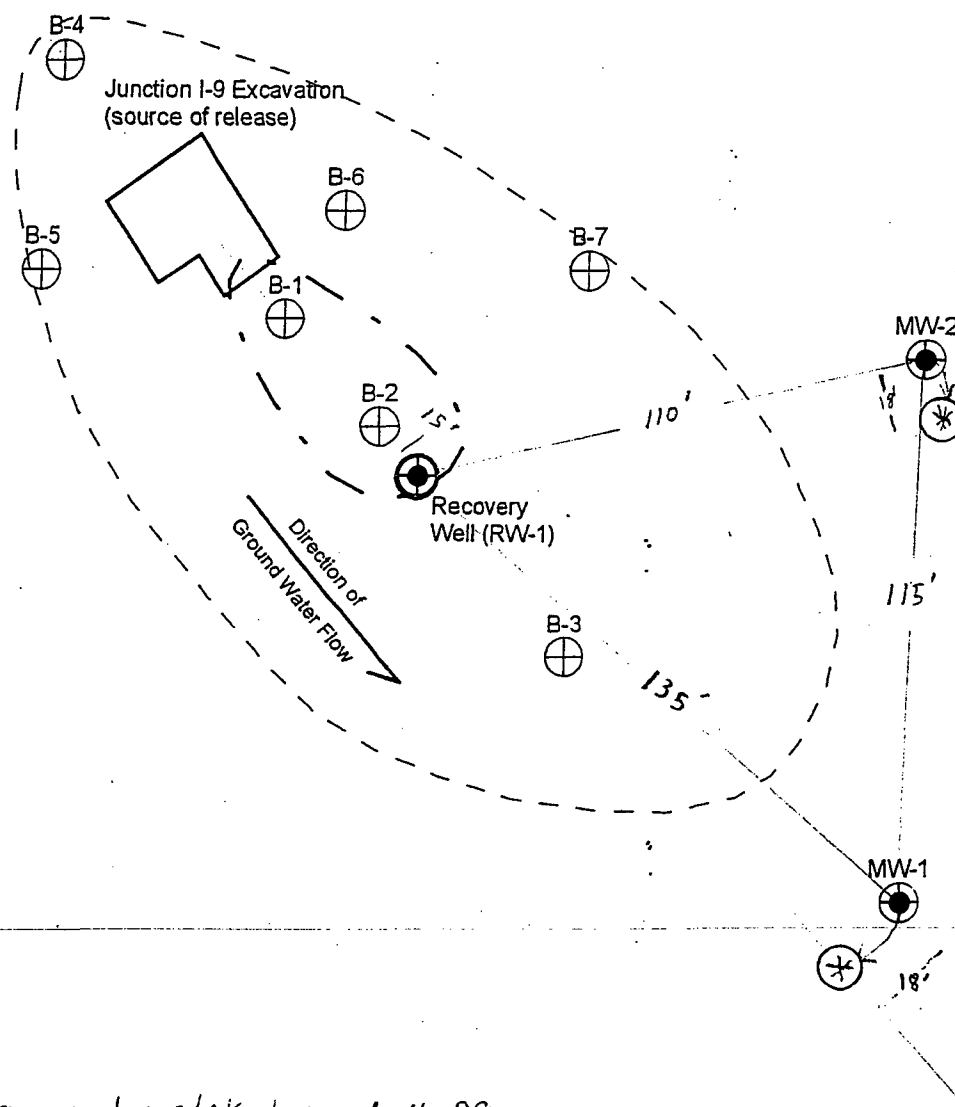
Transaction(s) completed

NO.	TX DATE/TIME	DESTINATION	DURATION	PGS.	RESULT	MODE
206	JAN. 6 15:46	15053930720	0° 00' 38"	001	OK	Normal

RICE OPERATING COMPANY
122 WEST TAYLOR
HOBBS, NM 88240
Phone: (505) 393-9174
Fax: (505) 397-1471

TO: NMOCDO Hobbs Office DATE: 1-6-99
ATTN: Chris Williams
FROM: Wes Root
SUBJECT: Interim Abatement, Jct I-9 site, 09-T195-R38E, Lea Co. NM
COVER PAGE PLUS 0 PAGE(S) TO FOLLOW

COMMENTS: As we discussed on January 4, 1999, installation of
the three wells to be used for interim abatement at the
Junction I-9 site will begin Thursday January 7, 1999.
The drilling contractor will begin at 7:00 AM. I
understand from our conversation this afternoon that
Paul Kautz, NMOCDO representative, may inspect drilling
operations at the site.



Locations measured & staked on 1-4-99
PAUL KAUTZ w/NMOCB witnessed well placement

SITE MAP

Jct. I-9 Release Site
09-T19S-R38E, Hobbs SWD System
Lea County, New Mexico

Rice Operating Company
122 W. Taylor
Hobbs, NM 88240

Legend



Proposed location for recovery well / monitor well



Soil boring completed in 10 / 98

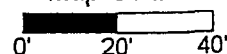


Estimated boundary of crude oil plume



Estimated boundary of dissolved hydrocarbon plume

Map Scale



RICE *Operating Company*

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

December 18, 1998

Mr. Wayne Price
New Mexico Energy and Minerals Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

**Re: Junction I-9 Release Site
Unit Letter I, Section 9 of T19S R38E
Hobbs Salt Water Disposal System
Lea County, New Mexico**

Mr. Price:

Thank you for your prompt review and approval of our request to initiate interim abatement measures at the above referenced site. However, based on the contents of your approval letter, there apparently has been a slight misunderstanding as to our conversations on December 15 and 17, 1998. Specifically, the reason we want to initiate interim abatement, why we would like to include monitoring wells, and the number of wells we want to install need to be clarified.

Rice requested interim abatement because it just makes good sense to begin abatement of the crude oil floating on the ground water; we are concerned that the Stage I Abatement approval process will take several months; and pursuant to New Mexico Oil Conservation Division (NMOCD) Rule 19.D.(g), we are allowed, with NMOCD approval, to begin abating water pollution while abatement plan approval is pending.

Rice Operating Company wishes to install a total of three wells, one recovery well and two down gradient monitoring wells as part of the interim abatement measures. As I stated on December 15th, the direction of ground water flow at the site could be accurately determined if there are three wells present. This information would allow us to develop a more accurate Stage I Abatement Plan.

While a potential for the release to have impacted water wells does exist, visual inspection of the two water wells we have identified within a one mile radius of the site to date showed no evidence of adverse impact. Both water wells are used to supply a stock tank. The well I discussed with you on December 15th is located approximately ¼ of a mile northwest of and in an apparent up gradient position relative to the site. The well I found on December 16th is located ¾ of a mile down gradient from the release site.

At this time there is no reason to assume that either water well has been adversely affected by our release and their existence had absolutely no bearing on Rice's decision to request installation of monitoring wells. The location of the two wells is shown on the enclosed topographic map.

Therefore, while we appreciate the decision to allow three monitoring wells to be installed, the combination of one recovery well and two monitor wells should be more than adequate for Rice to develop the Stage I Abatement plan. The three wells will be installed pursuant to the conditions specified in the approval letter. A site map showing the proposed locations for the recovery well (RW-1) and two monitoring wells (MW-1 and MW-2) is enclosed.

The two monitoring wells will be initially sampled for the parameters included in condition 4 of your approval letter. If these results are below regulatory limits, Rice requests that the NMOCD allow parameters, such as metals, be removed from future testing.

If you have any questions please feel free to call.

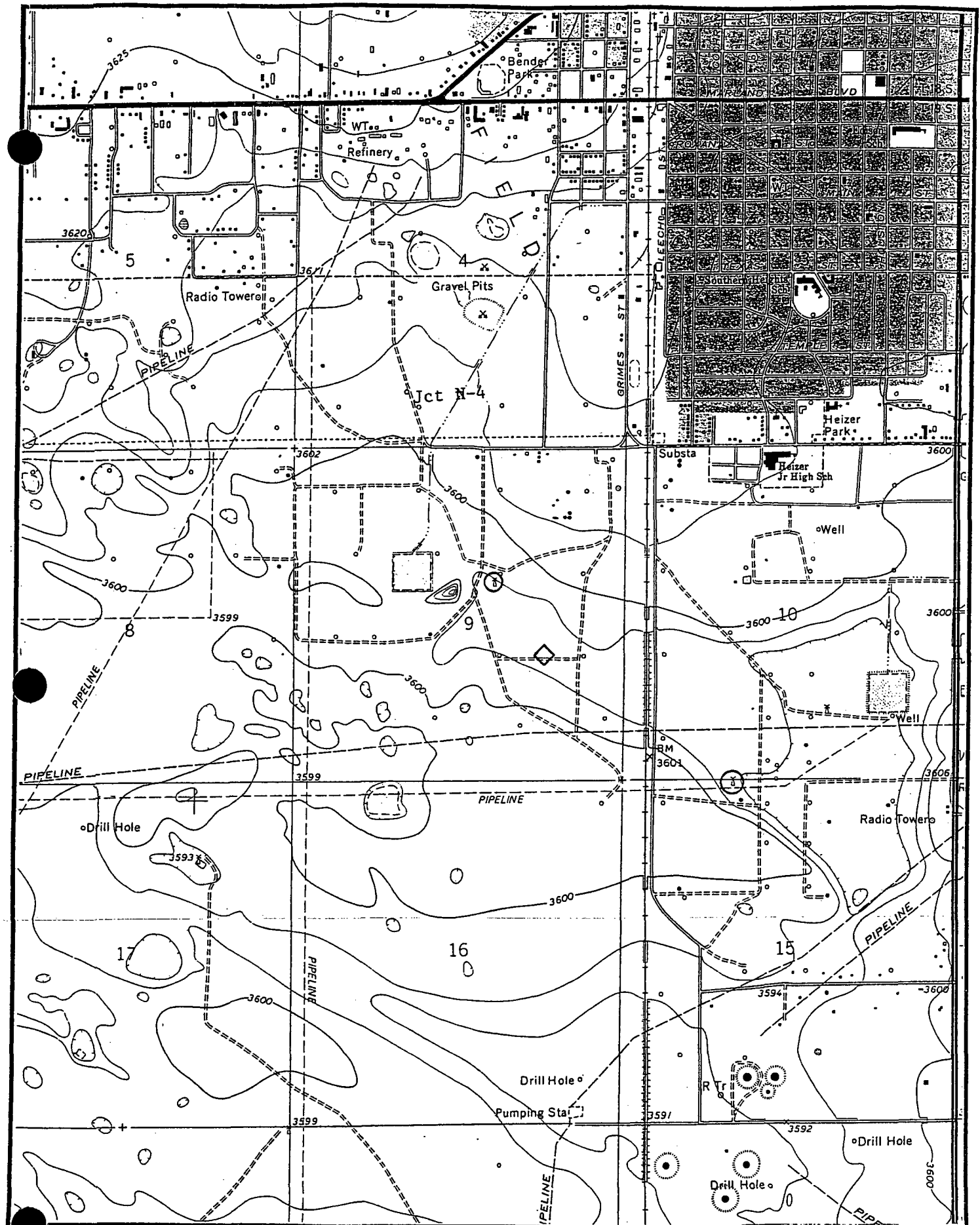
Sincerely,

F. Wesley Root

F. Wesley Root
Projects Manager

Enclosures

cc. Mr. Chris Williams, NMOCD District I Office
KH. File



Rice Operating Company
122 W. Taylor
Hobbs, NM 88240

Ph: (505) 393-9174 FAX 397-1471

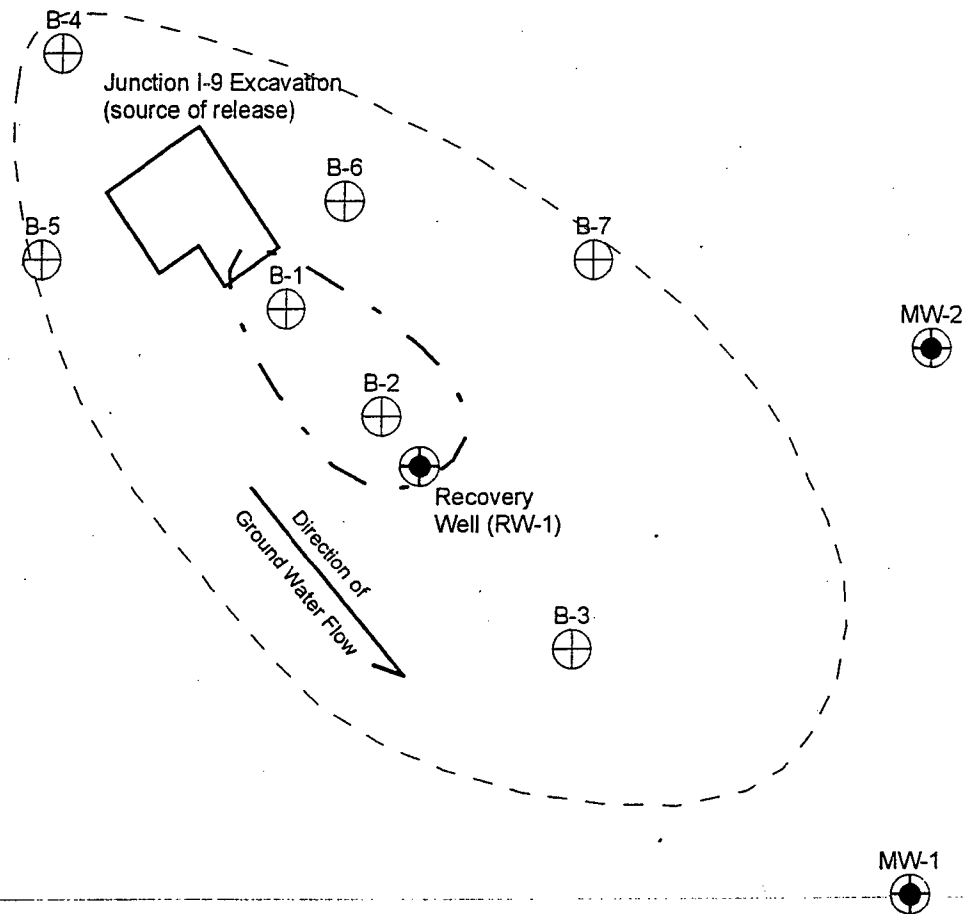
Map Legend

- - Stock Well Location
- ◇ - Junction I-9 Site

Hobbs West Topographic Map, Scale 1" = 2,000'

Junction I-9

Hobbs SWD System
Ltr I, Sec 09-T19S-R38E
Lea Co. NM



SITE MAP

Jct. I-9 Release Site
09-T19S-R38E, Hobbs SWD System
Lea County, New Mexico

Rice Operating Company
122 W. Taylor
Hobbs, NM 88240

Legend



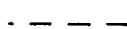
Proposed location for recovery well / monitor well



Soil boring completed in 10 / 98

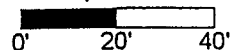


Estimated boundary of crude oil plume



Estimated boundary of dissolved hydrocarbon plume

Map Scale



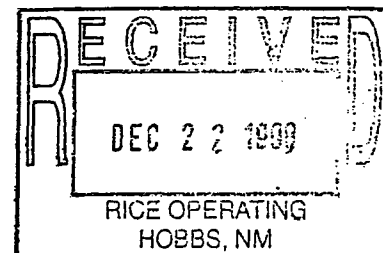


NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

CERTIFIED MAIL
RETURN RECEIPT NO: P 288 259 090

December 17, 1998



Mr. F. Wesley Root
Projects Manager
Rice Operating Company (ROC)
122 West Taylor
Hobbs, New Mexico 88240

RE: Abatement Plan (AP-8) Requirement
Rice Operating Company
Hobbs Salt Water Disposal System
UL I-Sec 9-Ts19s-R38e
Lea County, New Mexico

Dear Mr. Root:

New Mexico Oil Conservation Division (NMOCD) is in receipt of your letter sent by fax dated December 15, 1998 **requesting permission to initiate emergency interim abatement measures** at the above referenced facility. NMOCD also acknowledges your verbal request pursuant to our telephone conversation on December 17, 1998 to allow three monitor wells to be installed in addition to the one recovery well. It is NMOCD's understanding this decision was made after you confirmed that there is a domestic water well located down gradient from the spill site.

Therefore due to the potential for impacts on down gradient water wells and pursuant to NMOCD Rule 19.D.(g) your request is hereby approved subject to the following conditions:

1. All recovery and monitor wells shall be constructed per your drawing, except monitor wells can have different casing size. The annulus above the bentonite plug shall be grouted to the surface with an approved type cement grout containing 3-5% bentonite. Boring logs shall be recorded with all appropriate information.
2. Product recovery records shall be maintained and shall include volumes recovered, the product thickness measured before each recovery event, and the disposition of all waste generated. These Field records shall be maintained and submitted in subsequent reports. ROC shall properly retain a sample of the recovered oil for future possible fingerprinting.



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

3. NMOCD will allow one recovery well as proposed, and three monitor wells strategically located to determine the groundwater gradient and located a sufficient distance from the recovery well to make a preliminary determination of the down gradient extent of contamination.
4. Initial groundwater sampling analysis for all monitor wells shall include volatile organics (Method 8060), Semi-volatile organics (Method 8270), PAH's (Method 8310), WQCC Metals, and General Chemistry (PH, TDS, Conductivity, Major Cations and Anions).
5. ROC shall notify the District office 48 hours in advance before commencing any significant activities.
6. The above emergency action shall not interfere with the normal abatement plan process pursuant to NMOCD Rule 19.

Please be advised that NMOCD approval of this emergency plan does not relieve ROC of liability should their operations fail to adequately investigate and remediate contamination that poses a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve ROC of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price-Environmental Bureau

cc: Chris Williams-NMOCD District I Supervisor
Bill McNeill-Hobbs

file: O/wp/riceaba1



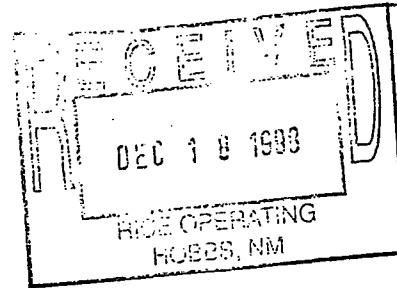
NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Certified Mail
Return Receipt No. Z 357 870 111

December 16, 1998

Mr. Bill McNeill
P.O. Box 1058
Hobbs, NM 88241
505-392-8790



Re: Abatement Plan (AP-8) Requirement
Rice Operating Company
Hobbs Salt Water Disposal System
Lea County, New Mexico

Dear Mr. McNeill:

New Mexico Oil Conservation Division (NMOCD) hereby gives notice that NMOCD has required Rice Operating Company to submit an Abatement Plan for the above referenced facility located in Unit Letter I, Section 9-Ts 19s-R38e, pursuant to NMOCD Rule 19 (Prevention and Abatement of Water Pollution). A copy of Rule 19 has been enclosed for your information.

Pursuant to our telephone conversation on December 15, 1998 NMOCD understands that you are the current land owner and that one of your down gradient water wells approximately 1/4 mile away which is used for watering domestic stock has been impacted from this spill. We understand your technical adviser has sampled this well to verify this fact and has indicated to you that ground water movement could be as high as three feet per day. In order to expedite this matter NMOCD respectfully requests that you send us a map showing the location of your well in reference to the spill, the analytical results of any water quality sampling, and information from your technical adviser as to the ground water flow rate.

NMOCD understands you wish to intervene in this case and will copy you on all correspondence concerning this issue. NMOCD is very concerned about any oilfield groundwater contamination in the state of New Mexico and requires that a responsible person abate pollution in accordance with all applicable rules and regulations.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price-Environmental Bureau

cc: Roger Anderson-Environmental Bureau Chief, Santa Fe, NM
Lori Wrotenbery-NMOCD Director
Mr. Wes Root-Rice Operating Co.-Hobbs
OCD District I Office-Hobbs

attachments-1

file: O/wp/mcneille

RICE Operating Company

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

December 15, 1998

Mr. Wayne Price
New Mexico Energy and Minerals Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

**Re: Junction I-9 Release Site
Unit Letter I, Section 9 of T19S R38E
Hobbs Salt Water Disposal System
Lea County, New Mexico**

Mr. Price:

Rice Operating Company requests that the New Mexico Oil Conservation Division approve the installation of a recovery well at the above listed site as an interim abatement measure.

As we discussed during our telephone conversation this morning, the well would be used to recover crude oil floating on top of the water table at the site until an abatement plan pursuant to 19 NMAC 15.A.19 can be approved and implemented. A site map showing the proposed location for the recovery well (RW-1) and well construction diagram are enclosed.

Crude oil would be recovered by manually bailing the well a minimum of three days per week. The initial bailing schedule will be Monday, Wednesday, and Friday. After measuring the volume of crude oil recovered during each bailing event, the recovered fluids will be placed back into the Hobbs Salt Water Disposal System for disposal. A monthly summary of the crude oil volume recovered, including a cumulative total, will be prepared and kept on file at our Hobbs Office.

Your prompt response to this request will greatly assist our abatement efforts. If you have any questions please feel free to call.

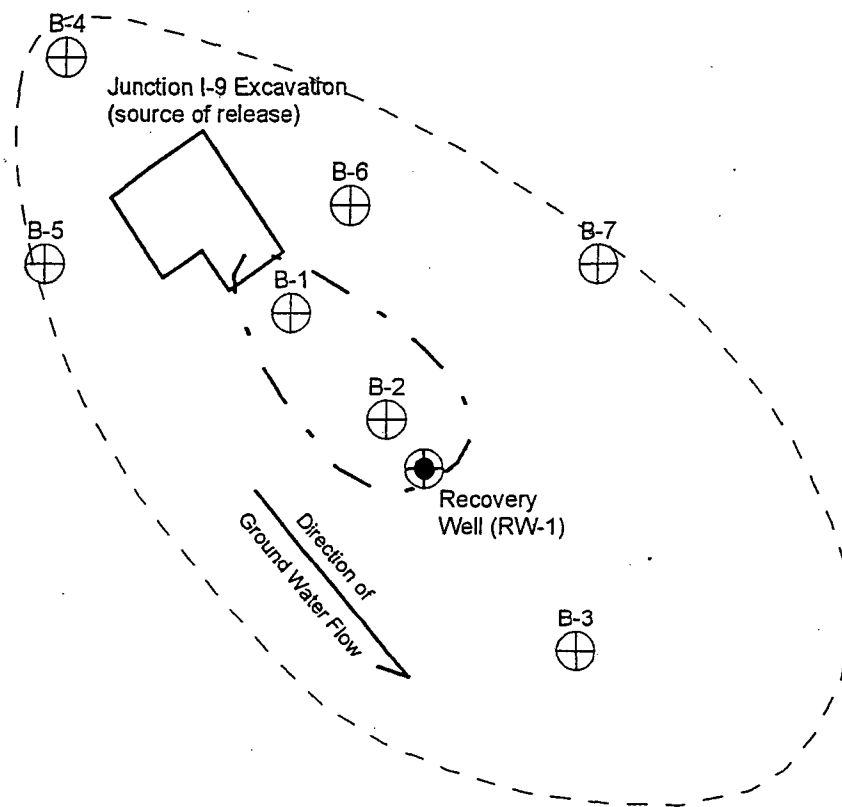
Sincerely,

F. Wesley Root

F. Wesley Root
Projects Manager

Enclosure

cc. Mr. Chris Williams, NMOCD District I Office
KH. File



SITE MAP

Jct. I-9 Release Site
09-T19S-R38E, Hobbs SWD System
Lea County, New Mexico

Rice Operating Company
122 W. Taylor
Hobbs, NM 88240

Legend



Proposed location for recovery well



Soil boring completed in 10 / 98

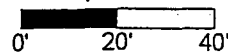


Estimated boundary of crude oil plume



Estimated boundary of dissolved hydrocarbon plume

Map Scale



Function I-9 Release Site
Unit Ltr. I, 09-T19S-R38E
Hobbs SWD System, Lea Co. NM

Flush Mounted Recovery Well

Job Number:

Installation Date:

Monitor Well Number:

RW-1

40 feet

Bore Size:

7-inches

Casing Size:

4-inch PVC

Casing Elevation:

Screen Size:

0.02-inch Slot

Top of Water Elevation:

Ground Surface

Top of Casing

(3'x3')

Cement Pad

Locking Monitor Well Cap

(25')

Casing

(30')

Depth to Top of
Static Water Table

(20')

Depth to Top of
Bentonite Plug

(24')

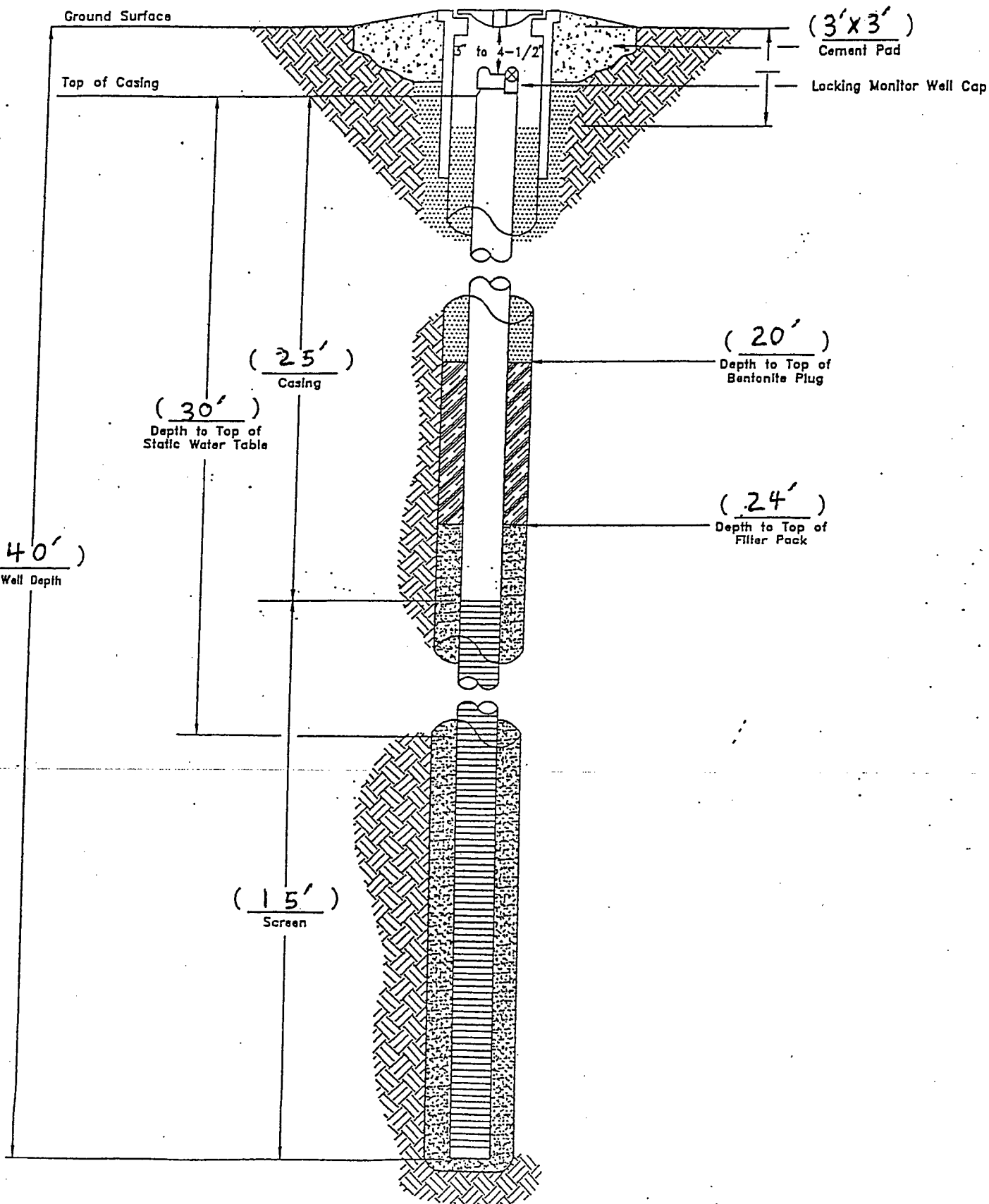
Depth to Top of
Filter Pack

(40')

Well Depth

(15')

Screen





NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

CERTIFIED MAIL

RETURN RECEIPT NO: P 288 259 088

Mr. F. Wesley Root
Projects Manager
Rice Operating Company (ROC)
122 West Taylor
Hobbs, New Mexico 88240

RE: Abatement Plan (AP-8) Requirement
Rice Operating Company
Hobbs Salt Water Disposal System
Lea County, New Mexico

Dear Mr. Root:

The New Mexico Oil Conservation Division (OCD) has reviewed Rice Operating Company's (ROC) Release Notification letter dated October 22, 1998 concerning the discovery of hydrocarbon-impacted ground water on October 20, 1998 located at ROC's Hobbs Salt Water Disposal System Unit letter I, Section 9, Township 19 south, Range 38 east in Lea County, New Mexico.

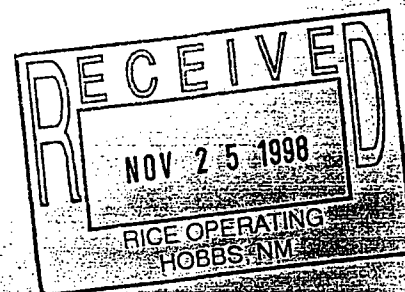
Pursuant to 19 NMAC 15.A.19.C.1, the OCD requires an abatement plan for the ROC site to abate ground water pollution. To initiate the abatement plan process, the OCD requires that ROC submit to the OCD by January 20, 1999 a Stage 1 abatement plan investigation proposal pursuant to OCD Rule 19.E.1. and OCD Rule 19.E.3.

If you have any questions, please contact Wayne Price of my staff at (505) 827-7155.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

xc: Chris Williams-NMOCD District I Supervisor



APPENDIX B

BORING LITHOLOGY LOGS

ENERCON SERVICES, INC. 2775 VILLA CREEK, SUITE 120 DALLAS, TX 75234-7420		RECORD OF SUBSURFACE EXPLORATION			
Project #: EV-958		Well/Boring #: B-1		Date Drilled: 10/20/98	
Project: Junction I-9 Hobbs SWD System Lea County, New Mexico		Drilling West Texas Water Company: Well Service Driller: Bernie		Drilling Air Rotary Method: Logged By: SAL	
DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE NUMBER/ TIME	SAMPLE TYPE	OVA (PPM)	REMARKS/SAMPLE DESCRIPTION
0	Brown sandy top soil to 6"				
	Brown silty fine SAND 6" to 2'				
	White to tan caliche-soft crumbly from 2' to 5'	1 / 8:45	SS	0	Sample 1 collected from 4' to 5' using a split spoon sampling device. Sample was light tan to white caliche.
5	Light tan caliche with fine sand 5' to 10'.				
		2 / 8:55	SS	85	Sample 2 collected from 10' to 12' using a split spoon. Sample was light tan with some gray staining. Some odor.
10	Light tan caliche with fine tan sand from 10' to 15'.				
		3 / 9:00	SS	297	Sample 3 collected from 15' to 16' using a split spoon. Sample was light tan caliche and fine sand stained gray. Strong odor.
15	Light tan fine caliche and sand stained gray, 15' to 20'.				
		4 / 9:10	SS	54	Sample 4 collected from 20' to 20'6" using a split spoon. Sample was hard light blue stained caliche and chert. Some odor.
20	Light blue caliche with blue stained chert, very hard from 20' to approximately 20.6 feet. Then sandy tan to tan and gray stained layer to 25'.				
		5 / 9:40	Core	254	Sample 5 collected from 25' to 26' using a split spoon. Sample was soft caliche and fine sand stained gray. Strong odor.
25	Caliche stained blue-gray, some fine sand tan to gray from 25' to approximately 28'. Hard				
	Hard red chert stained blue-gray. Caliche stained gray from 28' to 30'.	6 / 9:50	Core	261	Sample 6 collected at 28' using a core sampling tool. Sample was hard light blue and caliche stained blue-gray. Strong odor.
30	Caliche and sand stained gray from 30' to approximately 32'.				
		7 / 10:00	Core	195	Sample 7 collected at 30' using a core sampling tool. Sample was power caliche stained gray. Some odor.
		8 / 10:10	Core	110	Sample 8 collected at 32' using a core sampling tool. Sample was light tan sand and caliche. No staining and no odor.
35	Light tan caliche with chips or pink-red chert and no odor from 32' to 34'.				
40	Total depth of boring, 34 feet. Depth to groundwater, 31.6 feet measured on 10/21/98. Phase-separated hydrocarbon (PSH), 0.8 feet, measured on 10/21/98.				

ABBREVIATIONS AND SYMBOLS

SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 THD - Texas Highway Department Cone
 CT-S' - Continuous Sampler

HSA - Hollow Stem Auger
 CFA - Continuous Flight Augers
 DC - Driving Casing
 MD - Mud Drilling

ENERCON SERVICES, INC. 2775 VILLA CREEK, SUITE 120 DALLAS, TX 75234-7420		RECORD OF SUBSURFACE EXPLORATION			
Project #: EV-958		Well/Boring #: B-2		Date Drilled: 10/20/98	
Project: Junction I-9 Hobbs SWD System Lea County, New Mexico		Drilling West Texas Water Company: Well Service Driller: Bernie		Drilling Air Rotary Method: Logged By: SAL	
DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE NUMBER/ TIME	SAMPLE TYPE	OVA (PPM)	REMARKS/SAMPLE DESCRIPTION
0	Brown sandy top soil to 6"				
	Brown silty fine sand 6" to 2'				
	White to tan caliche-soft crumbly from 2' to 5'	1 / 10:45	SS	0	Sample 1 collected from 5' to 6' using a split spoon sampling device. Sample was light tan to white, soft, crumbly caliche.
5	Light tan to white caliche with fine sand, crumbly, soft, 5' to 10'.				
		2 / 10:50	SS	0	Sample 2 collected from 10' to 12' using a split spoon. Sample was light tan caliche. No odor.
10	Light tan caliche with fine tan sand, crumbly and soft, from 10' to 15'.				
		3 / 10:55	Core	2	Sample 3 collected from 15' to 16' using a coring tool. Sample was light tan/white caliche and fine sand stained gray. No odor.
15	Hard white caliche and tan fine sand. Some blue-gray color, 15' to 20'.				
		4 / 11:00	Core	266	Sample 4 collected from 20' to 21' using a coring tool. Sample was hard blue-gray stained caliche. Strong odor.
20	Hard caliche stained blue-gray, 20' to 23'. Strong odor. Then hard blue-gray stained caliche and chert, 23' to 25'.				
		5 / 11:10	Core	274	Sample 5 collected from 25' to 26' using a coring tool. Sample was hard caliche and chert stained blue-gray. Strong odor.
25	Hard caliche stained blue-gray with blue-gray stained chert mixed in, 25' to 28'.				
	Light tan caliche stained blue-gray with chips of chert, 28' to 30'.	6 / 11:20	Core	174	Sample 6 collected at 30' to 31' using a core sampling tool. Sample was white caliche stained gray with black lines running through the sample core. Some odor.
30	Light tan caliche stained gray with thin black lines in the center of the core, from 30' to 33'.				
35					
40	Total depth of boring, 33 feet. Depth to groundwater, 31.6 feet measured on 10/21/98. Phase-separated hydrocarbon (PSH), 0.7 feet, measured on 10/21/98.				

ABBREVIATIONS AND SYMBOLS

SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 THD - Texas Highway Department Cone
 CT-5' - Continuous Sampler

HSA - Hollow Stem Auger
 CFA - Continuous Flight Augers
 DC - Driving Casing
 MD - Mud Drilling

ENERCON SERVICES, INC. 2775 VILLA CREEK, SUITE 120 DALLAS, TX 75234-7420		RECORD OF SUBSURFACE EXPLORATION			
Project #: EV-958		Well/Boring #: B-3		Date Drilled: 10/20/98	
Project: Junction I-9 Hobbs SWD System Lea County, New Mexico		Drilling Company: West Texas Water Well Service		Drilling Method: Air Rotary	
		Driller: Bernie		Logged By: SAL	
DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE NUMBER/ TIME	SAMPLE TYPE	OVA (PPM)	REMARKS/SAMPLE DESCRIPTION
0	Brown sandy top soil to 6".				
	Brown silty fine sand 6" to 2'.				
5	Light tan caliche 2' to 15'. No evidence of staining and no odor.				
10					
15	Light tan soft caliche and fine sand with intermittent hard layers and no evidence of staining from 15' to approximately 25'.	1 / 14:05	Core	2.2	Sample 1 collected at 15' using a coring tool. Sample was light tan/white caliche and fine sand no staining. No odor.
20		2 / 14:10	Core	1.3	Sample 2 collected at 20' using a coring tool. Sample was light tan and soft. No stain. No odor.
25	Light tan caliche stained blue-gray. Staining color became darker blue-gray from 25' to approximately 30'.	3 / 14:20	Core	214	Sample 3 collected at 25' using a coring tool. Sample was crumbly caliche stained blue-gray. Strong odor.
30	Crumbly caliche stained dark gray with thin black lines in the center of the core, from 30' to 31'.	4 / 14:30	Core	137	Sample 4 collected from 30' to 31' using a coring tool. Sample was dark gray stained caliche with black lines running through the sample core. Some odor.
35	Tan sand from 31' to 33'.	5 / 14:35	SS	8	Sample 5 collected from 31' to 33' using a split spoon. Sample was tan sand, no stain or odor.
40	Total depth of boring, 33 feet. Depth to groundwater, 31 feet measured on 10/21/98. Phase-separated hydrocarbon (PSH), NONE, measured on 10/21/98.				

ABBREVIATIONS AND SYMBOLS

SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 THD - Texas Highway Department Cone
 CT-5' - Continuous Sampler

HSA - Hollow Stem Auger
 CFA - Continuous Flight Augers
 DC - Driving Casing
 MD - Mud Drilling

ENERCON SERVICES, INC. 2775 VILLA CREEK, SUITE 120 DALLAS, TX 75234-7420		RECORD OF SUBSURFACE EXPLORATION			
Project #: EV-958		Well/Boring #: B-4		Date Drilled: 10/20/98	
Project: Junction I-9 Hobbs SWD System Lea County, New Mexico		Drilling West Texas Water Company: Well Service Droller: Bernie		Drilling Air Rotary Method: Logged By: SAL	
DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE NUMBER/ TIME	SAMPLE TYPE	OVA (PPM)	REMARKS/SAMPLE DESCRIPTION
0	Brown sandy top soil to 6"				
	Brown silty fine sand 6" to 2'				
	White to tan caliche-soft crumbly from 2' to 5'	1 / 15:05	SS	3	Sample 1 collected from 5' to 6' using a split spoon sampling device. Sample was light tan to white, soft, crumbly caliche. Dry and no odor.
5	Light tan to white caliche with fine sand, crumbly, soft, 5' to 10'.				
		2 / 15:10	SS	1.7	Sample 2 collected from 10' to 12' using a split spoon. Sample was light tan, dry caliche. No odor.
10	Light tan caliche with fine tan sand, crumbly and soft, from 10' to approximately 14'.				
		3 / 15:12	Core	10	Sample 3 collected at 15' using a coring tool. Sample was light tan/white caliche with red hard pieces of chert. No odor.
15	Hard red chert with white and light tan hard caliche and some sand, 14' to approximately 20'.				
		4 / 15:15	Core	177	Sample 4 collected at 20' using a coring tool. Sample was powdered, blue-gray stained caliche. Odor.
20	Dry powdered caliche stained blue-gray with odor, from 20' to 30'. At approximately 25' and 28' is thin layer of red chert.				
		5 / 15:25	Core	91	Sample 5 collected at 25' using a coring tool. Sample was caliche with some chert, stained blue-gray. Some odor.
25					
		6 / 15:40	SS	6.2	Sample 6 collected at 30' using a split spoon sampling tool. Sample was white caliche stained light blue-gray. Slight odor.
30	Light tan caliche with light gray stain and very little odor, from 30' to approximately 33'.				
35					
40	Total depth of boring, 33 feet. Depth to groundwater, 32.8 feet measured on 10/21/98. Phase-separated hydrocarbon (PSH), NONE, measured on 10/21/98.				

ABBREVIATIONS AND SYMBOLS

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 CFA - Continuous Flight Augers
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ENERCON SERVICES, INC. 2775 VILLA CREEK, SUITE 120 DALLAS, TX 75234-7420		RECORD OF SUBSURFACE EXPLORATION			
Project #: EV-958		Well/Boring #: B-5		Date Drilled: 10/20/98	
Project: Junction I-9 Hobbs SWD System Lea County, New Mexico		Drilling West Texas Water Company: Well Service Driller: Bernie		Drilling Air Rotary Method: Logged By: SAL	
DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE NUMBER/ TIME	SAMPLE TYPE	OVA (PPM)	REMARKS/SAMPLE DESCRIPTION
0	Brown sandy top soil to 6"				
	Brown silty fine sand 6" to 2'				
	White to tan caliche-soft crumbly from 2' to 5'				
5	Light tan to white caliche with fine sand, crumbly, dry, soft, 5' to 15'.				
15	Dry tan crumbly caliche stained blue-gray from 15' to 30'. Some odor. Red chert encountered at approximately 26'.	1 / 16:15	Core	21	Sample 1 collected at 15' using a coring tool. Sample was light tan/white caliche, dry, crumbly, stained blue-gray. Some odor.
20		2 / 16:23	Core	174	Sample 2 collected at 20' using a coring tool. Sample was light tan/white caliche, dry, crumbly, stained blue-gray. Some odor.
25		3 / 16:35	Core	81	Sample 3 collected at 25' using a coring tool. Sample was light tan caliche and chert stained blue-gray. Some odor.
30	Light tan caliche stained gray with thin black lines in the center of the core, from 30' to 33'.	4 / 16:45	Core	28	Sample 4 collected at 30' using a core sampling tool. Sample was white caliche stained gray with black lines running through the sample core. Some odor.
35					
40	Total depth of boring, 33 feet. Depth to groundwater, 32.7 feet measured on 10/21/98. Phase-separated hydrocarbon (PSH), NONE, measured on 10/21/98.				

ABBREVIATIONS AND SYMBOLS

SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
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 CFA - Continuous Flight Augers
 DC - Driving Casing
 MD - Mud Drilling

ENERCON SERVICES, INC. 2775 VILLA CREEK, SUITE 120 DALLAS, TX 75234-7420		RECORD OF SUBSURFACE EXPLORATION			
Project #: EV-958		Well/Boring #: B-6		Date Drilled: 10/21/98	
Project: Junction I-9 Hobbs SWD System Lea County, New Mexico		Drilling West Texas Water Company: Well Service Driller: Bernie		Drilling Air Rotary Method: Logged By: SAL	
DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE NUMBER/ TIME	SAMPLE TYPE	OVA (PPM)	REMARKS/SAMPLE DESCRIPTION
0	Brown sandy top soil to 6"				
	Light tan to gray caliche and sand from 6" to 5'.				
5	Light gray caliche and silty sand from 5' to 15'.	1 / 8:35	Core	0	Sample 1 collected from 5' to 7' using a coring tool. Sample was light gray silty sand. No odor.
10		2 / 8:40	Core	1.4	Sample 2 collected from 10' to 12' using a coring tool. Sample was light gray caliche and silty sand. No odor.
15	Light gray to brown silty sand from 15' to approximately 25'.	3 / 8:45	Core	3.2	Sample 3 collected from 15' to 16' using a coring tool. Sample was gray to brown silty sand. No odor.
20		4 / 8:47	Core	290	Sample 4 collected from 20' to 21' using a coring tool. Sample was light brown and gray silty sand. Strong odor.
25	Tan and gray silty sand from 25' to approximately 30'.	5 / 8:50	Core	237	Sample 5 collected from 25' to 26' using a coring tool. Sample was light gray and tan silty sand. Strong odor.
30	Tan sand from 30 to 33'.	6 / 9:05	Core	255	Sample 6 collected at 30' to 31' using a core sampling tool. Sample was tan sand. Some odor.
35					
40	Total depth of boring, 33 feet. Depth to groundwater, 32.7 feet measured on 10/21/98. Phase-separated hydrocarbon (PSH), NONE, measured on 10/21/98.				

ABBREVIATIONS AND SYMBOLS

SS - Driven Split Spoon
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 CFA - Continuous Flight Augers
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ENERCON SERVICES, INC. 2775 VILLA CREEK, SUITE 120 DALLAS, TX 75234-7420		RECORD OF SUBSURFACE EXPLORATION			
Project #: EV-958		Well/Boring #: B-7		Date Drilled: 10/21/98	
Project: Junction I-9 Hobbs SWD System Lea County, New Mexico		Drilling West Texas Water Company: Well Service Driller: Bernie		Drilling Air Rotary Method: Logged By: SAL	
DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE NUMBER/ TIME	SAMPLE TYPE	OVA (PPM)	REMARKS/SAMPLE DESCRIPTION
0	Brown sandy top soil to 6"				
	Light tan to gray caliche and sand from 6" to 5'.				
5	Light gray caliche and silty sand from 5' to 15'.				
15	Light tan dry, crumbly caliche from 15' to approximately 25'.	1 / 9:30	Core	3.6	Sample 1 collected from 15' to 16' using a coring tool. Sample was tan crumbly caliche. No odor.
20		2 / 9:40	Core	6.6	Sample 2 collected from 20' to 21' using a coring tool. Sample was tan crumbly caliche. No odor.
25	Soft light tan caliche with hard blue-gray stained caliche from 25' to approximately 30'.	3 / 9:45	Core	125	Sample 3 collected from 25' to 26' using a coring tool. Sample was soft tan caliche and hard blue-gray caliche. Some odor.
30	Light tan silty sand from 30' to 31'.	4 / 9:55	Core	145	Sample 4 collected at 30' to 31' using a core sampling tool. Sample was light tan silty sand. No staining. Some odor.
40	Total depth of boring, 31 feet. Depth to groundwater, NONE. Phase-separated hydrocarbon (PSH), NONE, measured on 10/21/98.				

ABBREVIATIONS AND SYMBOLS

SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 THD - Texas Highway Department Cone
 CT-5' - Continuous Sampler

HSA - Hollow Stem Auger
 CFA - Continuous Flight Augers
 DC - Driving Casing
 MD - Mud Drilling

DRILLING LOG RICE Operating Company 122 West Taylor Hobbs, New Mexico 88240 Phone: (505) 393-9174 Fax: (505) 397-1471	Site Name /Location Junction I-9 09-T19S-R38E Hobbs SWD System Lea Co. New Mexico	Well No B-8	Date Drilled: 1-7-99	Driller: C. Harrison	Logged by: FWR
		Well Depth: N/A	Boring Depth: 40'	Well Material: N/A	Construction: Plugged boring by filling from total depth to surface with bentonite
		Casing Length: N/A	Boring Diameter: 8"	Casing Size: N/A	
		Screen Length: N/A	Drilling Method: Air Rotary	Slot Size: N/A	

DEPTH (Feet)	SUBSURFACE LITHOLOGY	Sample Type	OVM (ppm)	REMARKS	Boring
0	Light brown, fine-grained, calcareous sand				
1					
2	White to light gray Caliche				
3					
4					
5		Drill Cuttings	>1		
6					
7					
8					
9					
10		Drill Cuttings	>1		
11					
12					
13					
14					
15		Drill Cuttings	>1		
16					
17					
18					
19					
20		Drill Cuttings	>1		
21					
22					
23					
24					
25		Drill Cuttings	22		
26					
27					
28					
29					
30		Drill Cuttings	19	Hydrocarbon stain	
31	Light brown to pink fine-grained sand				
32					
33				Depth to Water 0.00 feet LNAPL gauged 1-8-99	
34					
35		Drill Cuttings	>1		
36					
37					
38					
39		Drill Cuttings	>1		
40					

DRILLING LOG RICE Operating Company 122 West Taylor Hobbs, New Mexico 88240 Phone: (505) 393-9174 Fax: (505) 397-1471	Site Name / Location Junction I-9 09-T19S-R38E Hobbs SWD System Lea Co. New Mexico	Well No. B-9	Date Drilled: 1-7-99	Driller: C. Harrison	Logged by: FWR
		Well Depth: N/A	Boring Depth: 40'	Well Material: N/A	Construction: Plugged boring by filling from total depth to surface with bentonite
		Casing Length: N/A	Boring Diameter: 8"	Casing Size: N/A	
		Screen Length: N/A	Drilling Method: Air Rotary	Slot Size: N/A	

DEPTH (Feet)	SUBSURFACE LITHOLOGY	Sample Type	OVM (ppm)	REMARKS	Boring
0					
1	Light brown, fine-grained, calcareous sand				
2					
3					
4					
5		Drill Cuttings	>1		
6					
7					
8	White to light gray Caliche				
9					
10		Drill Cuttings	>1		
11					
12					
13					
14					
15		Drill Cuttings	>1		
16					
17					
18					
19					
20		Drill Cuttings	127	Hydrocarbon stain	
21					
22					
23	Indurated red-brown silicious sandstone				
24					
25		Drill Cuttings	173	Hydrocarbon stain	
26	Light gray caliche				
27					
28					
29					
30		Drill Cuttings	46		
31					
32				Depth to Water 0.00 feet LNAPL gauged 1-8-99	
33	Indurated red-brown silicious sandstone				
34					
35		Drill Cuttings	4		
36	Light brown to pink fine-grained sand				
37					
38					
39		Drill Cuttings	>1		
40					

 Bentonite Seal

APPENDIX C

MONITOR WELL CONSTRUCTION DIAGRAMS

DRILLING LOG RICE Operating Company 122 West Taylor Hobbs, New Mexico 88240 Phone: (505) 393-9174 Fax: (505) 397-1471	Site Name /Location Junction I-9 09-T19S-R38E Hobbs SWD System Lea Co. New Mexico	Well No. MW-1	Date Drilled: 1-7-99	Driller: C. Harrison	Logged by: FWR
		Well Depth: 40'	Boring Depth: 40'	Well Material: Sch 40 PVC	Construction: Flush-mount set in 3' by 3' pad w/ locking cap
		Casing Length: 25'	Boring Diameter: 6"	Casing Size: 2"	
		Screen Length: 15'	Drilling Method: Air Rotary	Slot Size: 0.02"	

DEPTH (Feet)	SUBSURFACE LITHOLOGY	Sample Type	OVM (ppm)	REMARKS	Well Design
0	Light brown, fine-grained, calcareous sand				
1					
2	White to light gray Caliche				
3					
4					
5		Drill Cuttings	>1		
6					
7					
8					
9					
10		Drill Cuttings	>1		
11					
12					
13					
14					
15		Drill Cuttings	>1		
16					
17					
18					
19					
20		Drill Cuttings	>1		
21					
22					
23					
24					
25		Drill Cuttings	>1		
26					
27					
28					
29	Gray limestone				
30		Drill Cuttings	>1		
31					
32					
33					
34	Indurated red-brown silicious sandstone				
35		Drill Cuttings	>1		
36					
37					
38					
39	Light brown to pink fine-grained sand	Drill Cuttings	>1		
40					

● Depth to Water

	Cement Grout
	Bentonite Seal
	Sand Pack
	Factory Slot Screen

DRILLING LOG RICE Operating Company 122 West Taylor Hobbs, New Mexico 88240 Phone: (505) 393-9174 Fax: (505) 397-1471	Site Name /Location Junction I-9 09-T19S-R38E Hobbs SWD System Lea Co. New Mexico	Well No. MW-2	Date Drilled: 1-7-99	Driller: C. Harrison	Logged by: FWR
		Well Depth: 40'	Boring Depth: 40'	Well Material: Sch 40 PVC	Construction: Flush-mount set in 3' by 3' pad w/ locking cap
		Casing Length: 25'	Boring Diameter: 6"	Casing Size: 2"	
		Screen Length: 15'	Drilling Method: Air Rotary	Slot Size: 0.02"	

DEPTH (Feet)	SUBSURFACE LITHOLOGY	Sample Type	OVM (ppm)	REMARKS	Well Design
0	Light brown, fine-grained, calcareous sand				
1					
2					
3					
4					
5		Drill Cuttings	>1		
6					
7					
8					
9					
10	White to light gray Caliche	Drill Cuttings	>1		
11					
12					
13					
14					
15		Drill Cuttings	>1		
16					
17					
18					
19					
20	Light gray limestone	Drill Cuttings	>1		
21					
22					
23					
24					
25					
26					
27					
28					
29					
30	Light gray, silty, caliche	Drill Cuttings	>1		
31					
32					
33					
34					
35					
36					
37					
38					
39					
40	Gray limestone	Drill Cuttings	>1		
	Light brown to pink fine-grained sand	Drill Cuttings	>1		

● Depth to Water

Cement Grout

Bentonite Seal

Sand Pack

Factory Slot Screen

DRILLING LOG RICE Operating Company 122 West Taylor Hobbs, New Mexico 88240 Phone: (505) 393-9174 Fax: (505) 397-1471	Site Name /Location Junction I-9 09-T19S-R38E Hobbs SWD System Lea Co. New Mexico	Well No. RW-1	Date Drilled: 1-7-99	Driller: C. Harrison	Logged by: FWR
		Well Depth: 35'	Boring Depth: 35'	Well Material: Sch 40 PVC	Construction: Flush-mount set in 3' by 3' pad w/ locking cap
		Casing Length: 20'	Boring Diameter: 8"	Casing Size: 4"	
		Screen Length: 15'	Drilling Method: Air Rotary	Slot Size: 0.02"	

DEPTH (Feet)	SUBSURFACE LITHOLOGY	Sample Type	OVM (ppm)	REMARKS	Well Design
0	Light brown, fine-grained, calcareous sand				
1					
2	White to light gray Caliche				
3					
4					
5		Drill Cuttings	>1		
6					
7					
8					
9					
10		Drill Cuttings	48	Hydrocarbon stain	
11					
12					
13					
14					
15		Drill Cuttings	180	Hydrocarbon stain	
16					
17	Gray limestone				
18					
19					
20		Drill Cuttings	114	Hydrocarbon stain	
21					
22					
23					
24	Light gray, silty, caliche				
25		Drill Cuttings	212	Hydrocarbon stain	
26					
27					
28					
29	Gray limestone interbedded with red-brown silicious sandstone				
30		Drill Cuttings	89	Hydrocarbon stain	
31					
32					
33	Indurated red-brown silicious sandstone				
34		Drill Cuttings	>1		
35					
36					
37					
38					
39					
40					

Depth to Water
0.25 feet LNAPL
gauged 1-8-99

	Cement Grout
	Bentonite Seal
	Sand Pack
	Factory Slot Screen

DRILLING LOG RICE Operating Company 122 West Taylor Hobbs, New Mexico 88240 Phone: (505) 393-9174 Fax: (505) 397-1471	Site Name /Location Junction I-9 09-T19S-R38E Hobbs SWD System Lea Co. New Mexico	Well No. MW-3	Date Drilled: 1-8-99	Driller: C. Harrison	Logged by: FWR
		Well Depth: 40'	Boring Depth: 40'	Well Material: Sch 40 PVC	Construction: Flush-mount set in 3' by 3' pad w/ locking cap
		Casing Length: 25'	Boring Diameter: 6"	Casing Size: 2"	
		Screen Length: 15'	Drilling Method: Air Rotary	Slot Size: 0.02"	

DEPTH (Feet)	SUBSURFACE LITHOLOGY	Sample Type	OVM (ppm)	REMARKS	Well Design
0					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

 Cement Grout
 Bentonite Seal
 Sand Pack
 Factory Slot Screen

APPENDIX D

LABORATORY ANALYTICAL RESULTS

CERTES ENVIRONMENTAL LABORATORIES ANALYTICAL REPORT

Certes File Number: 98-3543

Client Project I.D.:

EV 958

Prepared for:

**ENERCON SERVICES, INC. - DALLAS
2775 Villa Creek Suite 120
Dallas, TX 75234**

Attention:

Scott Lowry

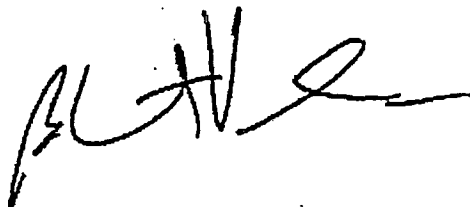
Report Date:

10/30/98

Included are the results of chemical analyses for the samples submitted to Certes Environmental Laboratories, L.L.C., on 10/22/98. All analytical results met Quality Control requirements as set by the industry accepted criteria. Please refer to the Laboratory Quality Control Results section of this report.

Sincerely,

Certes Environmental Laboratories, L.L.C.



**Bharat Vandra
Laboratory Manager**

ATTACHMENT E
LABORATORY REPORTS

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
Client Sample ID: B-1/20'-20.6'					Sample Number: 98-3543-001			
Date Sampled: 10/20/98					Sample Matrix: Solid			
Time Sampled: 9:10					Sampled By: SL			
EPA 8021B	Benzene	684	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Toluene	759	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Ethyl benzene	11000	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Xylenes (Total)	21700	µg/Kg	600	10/23/98	10/23/98	DWT	40
	Total BTEX (Calculated)	34143	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	97%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	158%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	1070	mg/Kg	500	10/26/98	10/27/98	JCA	50
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	50
	p-Terphenyl (SS)	* 0%	60-140%		10/26/98	10/27/98	JCA	50

* Surrogate recovery is out of range

Client Sample ID: B-1/28'					Sample Number: 98-3543-002			
Date Sampled: 10/20/98					Sample Matrix: Solid			
Time Sampled: 9:50					Sampled By: SL			
EPA 8021B	Benzene	285	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Toluene	1000	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Ethyl benzene	9170	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Xylenes (Total)	24600	µg/Kg	600	10/23/98	10/23/98	DWT	40
	Total BTEX (Calculated)	35055	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	93%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	153%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	1200	mg/Kg	500	10/26/98	10/27/98	JCA	50
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	50
	p-Terphenyl (SS)	* 0%	60-140%		10/26/98	10/27/98	JCA	50

* Surrogate recovery is out of range

Client Sample ID: B-1/30'					Sample Number: 98-3543-003			
Date Sampled: 10/20/98					Sample Matrix: Solid			
Time Sampled: 10:00					Sampled By: SL			
EPA 8021B	Benzene	1130	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Toluene	1030	µg/Kg	200	10/23/98	10/23/98	DWT	40

Sample: 98-3543-003 continued...

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
EPA 8021B	Ethyl benzene	13800	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Xylenes (Total)	19500	µg/Kg	600	10/23/98	10/23/98	DWT	40
	Total BTEX (Calculated)	35460	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	84%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	141%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	1130	mg/Kg	500	10/26/98	10/27/98	JCA	50
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	50
	p-Terphenyl (SS)	* 0%	60-140%		10/26/98	10/27/98	JCA	50

** Surrogate recovery is out of range*

Client Sample ID: B-2/25'-26'

Sample Number: 98-3543-004

Date Sampled: 10/20/98

Sample Matrix: Solid

Time Sampled: 11:10

Sampled By: SL

EPA 8021B	Benzene	477	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Toluene	716	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Ethyl benzene	11300	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Xylenes (Total)	25200	µg/Kg	600	10/23/98	10/23/98	DWT	40
	Total BTEX (Calculated)	37693	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	89%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	142%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	520	mg/Kg	250	10/26/98	10/27/98	JCA	25
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	25
	p-Terphenyl (SS)	* 0%	60-140%		10/26/98	10/27/98	JCA	25

** Surrogate recovery is out of range*

Client Sample ID: B-2/30'-31'

Sample Number: 98-3543-005

Date Sampled: 10/20/98

Sample Matrix: Solid

Time Sampled: 11:20

Sampled By: SL

EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	70	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Ethyl benzene	870	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	2510	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	3450	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	111%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	135%	49-158%		10/23/98	10/23/98	DWT	1

Sample: 98-3543-005 continued...

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
EPA 8015B	TPH (DRO)	278	mg/Kg	250	10/26/98	10/27/98	JCA	25
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	25
	p-Terphenyl (SS)	* 0%	60-140%		10/26/98	10/27/98	JCA	25

* Surrogate recovery is out of range

Client Sample ID: B-3/25'

Sample Number: 98-3543-006

Date Sampled: 10/20/98

Sample Matrix: Solid

Time Sampled: 14:20

Sampled By: SL

EPA 8021B	Benzene	<200	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Toluene	1520	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Ethyl benzene	6950	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Xylenes (Total)	15900	µg/Kg	600	10/23/98	10/23/98	DWT	40
	Total BTEX (Calculated)	24370	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	102%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	145%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	369	mg/Kg	250	10/26/98	10/27/98	JCA	25
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	25
	p-Terphenyl (SS)	* 0%	60-140%		10/26/98	10/27/98	JCA	25

* Surrogate recovery is out of range

Client Sample ID: B-3/31'-33'

Sample Number: 98-3543-007

Date Sampled: 10/20/98

Sample Matrix: Solid

Time Sampled: 14:35

Sampled By: SL

EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Ethyl benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	<150	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	0	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	108%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	96%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	<10	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	80%	60-140%		10/26/98	10/27/98	JCA	1

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analized By	Dilution
Client Sample ID: B-4/20'					Sample Number: 98-3543-008			
Date Sampled: 10/20/98					Sample Matrix: Solid			
Time Sampled: 15:15					Sampled By: SL			
EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	207	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Ethyl benzene	178	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	764	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	1149	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	111%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	134%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	50	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	64%	60-140%		10/26/98	10/27/98	JCA	1

Client Sample ID: B-4/30'					Sample Number: 98-3543-009			
Date Sampled: 10/20/98					Sample Matrix: Solid			
Time Sampled: 15:40					Sampled By: SL			
EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Ethyl benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	<150	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	0	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	109%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	108%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	47	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	70%	60-140%		10/26/98	10/27/98	JCA	1

Client Sample ID: B-5/20'					Sample Number: 98-3543-010			
Date Sampled: 10/20/98					Sample Matrix: Solid			
Time Sampled: 16:23					Sampled By: SL			
EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	288	µg/Kg	50	10/23/98	10/23/98	DWT	10

Sample: 98-3543-010 continued...		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
EPA 8021B	Ethyl benzene	188	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	759	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	1235	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	112%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	125%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	22	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	72%	60-140%		10/26/98	10/27/98	JCA	1

Client Sample ID: B-5/25'

Sample Number: 98-3543-011

Date Sampled: 10/20/98

Sample Matrix: Solid

Time Sampled: 16:35

Sampled By: SL

EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	268	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Ethyl benzene	264	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	566	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	1098	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
EPA 8015B	Difluorobenzene (SS)	104%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	135%	49-158%		10/23/98	10/23/98	DWT	1
	TPH (DRO)	69	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	*57%	60-140%		10/26/98	10/27/98	JCA	1

* Surrogate recovery is out of range

Client Sample ID: B-5/30'

Sample Number: 98-3543-012

Date Sampled: 10/20/98

Sample Matrix: Solid

Time Sampled: 16:45

Sampled By: SL

EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Ethyl benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	<150	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	0	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	111%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	99%	49-158%		10/23/98	10/23/98	DWT	1

Sample: 98-3543-012 continued...		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
EPA 8015B	TPH (DRO)	18	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	63%	60-140%		10/26/98	10/27/98	JCA	1

Client Sample ID: B-6/20'-21'

Sample Number: 98-3543-013

Date Sampled: 10/21/98

Sample Matrix: Solid

Time Sampled: 8:47

Sampled By: SL

EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	1390	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Ethyl benzene	1440	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	4660	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	7490	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	114%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	127%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	71	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	61%	60-140%		10/26/98	10/27/98	JCA	1

Client Sample ID: B-6/25'-26'

Sample Number: 98-3543-014

Date Sampled: 10/21/98

Sample Matrix: Solid

Time Sampled: 8:50

Sampled By: SL

EPA 8021B	Benzene	460	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Toluene	4260	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Ethyl benzene	12200	µg/Kg	200	10/23/98	10/23/98	DWT	40
	Xylenes (Total)	26400	µg/Kg	600	10/23/98	10/23/98	DWT	40
	Total BTEX (Calculated)	43320	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	85%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	143%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	234	mg/Kg	50	10/26/98	10/27/98	JCA	5
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	5
	p-Terphenyl (SS)	86%	60-140%		10/26/98	10/27/98	JCA	5

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
Client Sample ID: B-6/30'-31'					Sample Number: 98-3543-015			
Date Sampled: 10/21/98					Sample Matrix: Solid			
Time Sampled: 9:05					Sampled By: SL			
EPA 8021B	Benzene	581	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	130	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Ethyl benzene	2900	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	4170	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	7781	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	116%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	152%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	25	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	67%	60-140%		10/26/98	10/27/98	JCA	1

Client Sample ID: B-7/25'-26'					Sample Number: 98-3543-016			
Date Sampled: 10/21/98					Sample Matrix: Solid			
Time Sampled: 9:45					Sampled By: SL			
EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	100	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Ethyl benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	<150	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	100	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	103%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	117%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	106	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	* 59%	60-140%		10/26/98	10/27/98	JCA	1

* Surrogate recovery is out of range

Client Sample ID: B-7/30'					Sample Number: 98-3543-017			
Date Sampled: 10/21/98					Sample Matrix: Solid			
Time Sampled: 9:55					Sampled By: SL			
EPA 8021B	Benzene	<50	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Toluene	214	µg/Kg	50	10/23/98	10/23/98	DWT	10

Sample: 98-3543-017 continued...

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
EPA 8021B	Ethyl benzene	865	µg/Kg	50	10/23/98	10/23/98	DWT	10
	Xylenes (Total)	2190	µg/Kg	150	10/23/98	10/23/98	DWT	10
	Total BTEX (Calculated)	3269	µg/Kg		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	115%	74-119%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	117%	49-158%		10/23/98	10/23/98	DWT	1
EPA 8015B	TPH (DRO)	10	mg/Kg	10	10/26/98	10/27/98	JCA	1
	**Quality Control Surrogate				10/26/98	10/27/98	JCA	1
	p-Terphenyl (SS)	89%	60-140%		10/26/98	10/27/98	JCA	1

	Benzene	Toluene	Ethylbenzene	Xylenes	Diesel Range Organics
Matrix Spike					
Batch Number	102398H1	102398H1	102398H1	102398H1	DROS-0099
Date Prepared	10/23/98	10/23/98	10/23/98	10/23/98	10/26/98
Date Analyzed	10/23/98	10/23/98	10/23/98	10/23/98	10/27/98
Spiked Sample ID	3543-17	3543-17	3543-17	3543-17	N/A
Spike Level (mg/L) (µg/L) (mg/Kg) (µg/Kg)	100	100	100	200	83.3
Spike Result (mg/L) (µg/L) (mg/Kg) (µg/Kg)	108	104	93	183	30.0*
% Recovery	108	104	93	92	N/A
Spike Duplicate Result (mg/L) (µg/L) (mg/Kg) (µg/Kg)	111	107	96	191	196*
% Recovery Duplicate	111	107	96	96	N/A
Relative Percent Difference (RPD)	3	3	3	4	N/A
Control Limits (%low-%high)	70-130	70-130	70-130	70-130	53.3-112
Method Blank (mg/L) (µg/L) (mg/Kg) (µg/Kg)	<1	<1	<1	<3	<10.0
Laboratory Control Sample					
Spike Level (mg/L) (µg/L) (mg/Kg) (µg/Kg)	100	100	100	200	83.3
Spike Result (mg/L) (µg/L) (mg/Kg) (µg/Kg)	110	110	111	227	63.1
% Recovery	110	110	111	114	75
Spike Duplicate Result (mg/L) (µg/L) (mg/Kg) (µg/Kg)	N/A	N/A	N/A	N/A	70.5
% Recovery Duplicate	N/A	N/A	N/A	N/A	85
Relative Percent Difference (RPD)	N/A	N/A	N/A	N/A	11
Control Limits (%low-%high)	70-130	70-130	70-130	70-130	53.3-112

*See Case Narrative

µg/l = micrograms per liter (ppb)

µg/kg = micrograms per kilogram (ppb)

< = less than

MS = Matrix Spike

MSD = Matrix Spike Duplicate

LCS = Laboratory Control Sample

BS = Blank Spike

µmhos/cm = micromhos/centimeter

mg/l = milligrams per liter (ppm)

mg/kg = milligrams per kilogram (ppm)

% = percent

RPD = Relative Percentage Difference

RW - Reagent Water

LCSD = Laboratory Control Sample Duplicate

BSD = Blank Spike Duplicate

Certes Environmental Laboratories

2209 Wisconsin Street, Suite 200 Dallas, Texas, 75229 • 972-620-7966 • 800-394-2872 • FAX 972-620-7963 • Email: certes@aol.com

Certes

Environmental Laboratories, L.L.C.
2209 Wisconsin Street, Suite 200
Dallas, Texas 75229
972-620-7966 972-620-7963 Fax

Analysis(es) Requested

Client Name

~~Enron~~ Enercon - *LLC*

Phone No.

Client Address

122 West Taylor

Fax No.

Billing Address

City Hobbs State NM Zip 88240

Purchase Order No.

To ensure proper billing, please reference quotation number.

Project Manager

Scott A. Lowley

Site Location

JUNCTION Box 19 Hobbs NM

Certes No.

Sample ID

Date

Time

Matrix

No. & Type of Container?

V G J O P

1

B-1 / 26' - 20' 10"

10/20/98

910

Soil

✓

2

B-1 / 28'

10/20/98

950

Soil

✓

3

B-1 / 30'

10/20/98

10

Soil

✓

4

B-2 / 25' - 21'

10/20/98

1110

Soil

✓

5

B-2 / 30' - 31'

10/20/98

1120

Soil

✓

6

B-3 / 25'

10/20/98

1470

Soil

✓

7

B-3 / 31' - 33'

10/20/98

1435

Soil

✓

8

B-4 / 20'

10/20/98

1015

Soil

✓

9

B-A / 30'

10/20/98

1540

Soil

✓

Sampled By

SAL

1 Matrix:

2 Container Type:

3 Preservative:

TAT

Client Project ID

Standard Date Required 10/30

Relinquished by Samplers

Relinquished by

Relinquished by

Special Instructions (including specific detection limits)

Client will call back 8015 dr & 6060

At SAN 10/22

Certes Job Number

98-3543

Date 10/22/98

Received By

Date 10/22/98

Received By

Date 10/22/98

Received By Laboratory

Ricki Rose

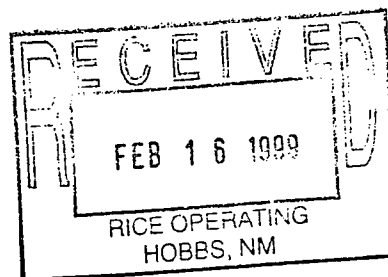
NOTE: By submitting these samples, you agree to the terms and conditions contained in Certes' Schedule of Fees. Certes cannot accept verbal changes. Please FAX written changes to (972) 620-7963.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

February 10, 1999

F. Wesley Root
RICE OPERATING COMPANY
122 West Taylor
Hobbs, NM 88240



The following report contains analytical results for the sample(s) received at Southern Petroleum Laboratories (SPL) on January 19, 1999. The sample(s) was assigned to Certificate of Analysis No. (s) 9901761 and analyzed for all parameters as listed on the chain of custody.

Sample MW-2 (SPL#9901761-01D) was randomly chosen as a quality Control sample for Total metals analysis by SW-846 method 6010. The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries were outside of advisable limits for Aluminum and Iron. A Laboratory Control Sample (LCS) was analyzed as a Quality Control check for the analytical batch and all recoveries were within acceptable limits.

Any data flags or quality control exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

If you have any questions or comments pertaining to this data report, please do not hesitate to contact me. Please reference the above Certificate of Analysis No. during any inquiries.

Again, SPL is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Southern Petroleum Laboratories

Electa Brown
Project Manager



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

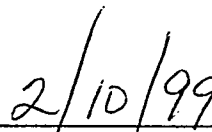
Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 99-01-761

Approved for Release by:



Electa Brown, Project Manager



Date

Greg Grandits
Laboratory Director

Cynthia Schreiner
Quality Assurance Officer

The attached analytical data package may not be reproduced except in full without the express written approval of this laboratory.
The results relate only to the samples tested.
Results reported on a Wet Weight Basis unless otherwise noted.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-02

Rice Operating Company
122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-1

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 12:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Liquid-liquid extraction SEMIVOLATILES Method 3520C *** Analyzed by: KL Date: 01/20/99 13:00:00	01/20/99			
Chloride Method 325.3 * Analyzed by: CV Date: 01/29/99 11:00:00	128	2	mg/L	
Carbonate, as CaCO ₃ Method SM 4500-CO ₂ D ** Analyzed by: TK Date: 01/19/99 16:20:00	ND	2	mg/L	
Bicarbonate, as CaCO ₃ Method SM 4500-CO ₂ D ** Analyzed by: TK Date: 01/19/99 16:20:00	332	2	mg/L	
pH Method 150.1 * Analyzed by: TK Date: 01/19/99 17:00:00	7.29		pH Units	
Resistivity Method 120.1 * Analyzed by: TK Date: 01/19/99 16:50:00	0.74	0.001	Mohms-cm	

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.



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PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-02

Rice Operating Company
122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-1

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 12:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sulfate Method 375.4 * Analyzed by: TW Date: 01/28/99 13:30:00	318	25	mg/L
Specific Gravity ASTM D1429 Analyzed by: DS Date: 02/02/99 14:00:00	0.982		g/cm3
Total Dissolved Solids Method 160.1 * Analyzed by: DS Date: 02/05/99 10:00:00	890	20	mg/L
Silver, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.01	mg/L
Aluminum, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	12.3	0.1	mg/L
Arsenic, Total Method 6010B *** Analyzed by: EG Date: 01/21/99 15:28:00	0.019	0.005	mg/L

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

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Rice Operating Company
122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-1

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 12:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Barium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.870	0.005	mg/L
Calcium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	727	1	mg/L
Cadmium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.005	mg/L
Cobalt, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.01	mg/L
Chromium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.01	mg/L
Copper, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.02	0.01	mg/L

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
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122 West Taylor
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DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-1

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 12:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Iron, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	9.34	0.02	mg/L	
Mercury, Total Method 7470 A*** Analyzed by: AG Date: 01/20/99 14:50:00	ND	0.0002	mg/L	
Potassium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	3	2	mg/L	
Magnesium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	43.9	0.1	mg/L	
Manganese, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.214	0.005	mg/L	
Molybdenum, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.02	mg/L	

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
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SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-1

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 12:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Sodium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	144	0.5	mg/L	
Nickel, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.02	0.02	mg/L	
Acid Digestion-Aqueous, ICP Method 3010A *** Analyzed by: EE Date: 01/19/99 13:00:00	01/19/99			
Lead, Total Method 6010B *** Analyzed by: EG Date: 01/21/99 15:28:00	0.005	0.005	mg/L	
Selenium, Total Method 6010B *** Analyzed by: EG Date: 01/21/99 15:28:00	ND	0.005	mg/L	
Zinc, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.05	0.02	mg/L	

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

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02/09/99

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SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-1

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 12:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Benzene	8	5	ug/L
Bromobenzene	ND	5	ug/L
Bromochloromethane	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	10	ug/L
n-Butylbenzene	ND	5	ug/L
sec-Butylbenzene	ND	5	ug/L
tert-Butylbenzene	ND	5	ug/L
Carbon tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chlorodibromomethane	ND	5	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	10	ug/L
2-Chlorotoluene	ND	5	ug/L
4-Chlorotoluene	ND	5	ug/L
1,2-Dibromo-3-chloropropane	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Dibromomethane	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
Dichlorodifluoromethane	ND	10	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
cis-1,2-Dichloroethene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
1,3-Dichloropropane	ND	5	ug/L
2,2-Dichloropropane	ND	5	ug/L
1,1-Dichloropropene	ND	5	ug/L
Ethylbenzene	32	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Isopropylbenzene	ND	5	ug/L
p-Isopropyltoluene	ND	5	ug/L
Methylene chloride	ND	5	ug/L

METHOD: 8260 Water, Volatile Organics
(continued on next page)



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-02

Rice Operating Company

SAMPLE ID: MW-1

ANALYTICAL DATA (continued)				
PARAMETER	RESULTS	PQL*	UNITS	
Naphthalene	ND	5	ug/L	
n-Propylbenzene	ND	5	ug/L	
Styrene	ND	5	ug/L	
1,1,1,2-Tetrachloroethane	ND	5	ug/L	
1,1,2,2-Tetrachloroethane	ND	5	ug/L	
Tetrachloroethene	ND	5	ug/L	
Toluene	ND	5	ug/L	
1,2,3-Trichlorobenzene	ND	5	ug/L	
1,2,4-Trichlorobenzene	ND	5	ug/L	
1,1,1-Trichloroethane	ND	5	ug/L	
1,1,2-Trichloroethane	ND	5	ug/L	
Trichloroethene	ND	5	ug/L	
Trichlorofluoromethane	ND	5	ug/L	
1,2,3-Trichloropropane	ND	5	ug/L	
1,2,4-Trimethylbenzene	7	5	ug/L	
1,3,5-Trimethylbenzene	ND	5	ug/L	
Vinyl chloride	ND	10	ug/L	
Xylenes (total)	12	5	ug/L	
Acetone	ND	100	ug/L	
Carbon Disulfide	ND	5	ug/L	
Vinyl Acetate	ND	10	ug/L	
2-Butanone	ND	20	ug/L	
1,2-Dichloroethene (total)	ND	5	ug/L	
2-Chloroethylvinylether	ND	10	ug/L	
4-Methyl-2-Pentanone	ND	10	ug/L	
cis-1,3-Dichloropropene	ND	5	ug/L	
trans-1,3-Dichloropropene	ND	5	ug/L	
2-Hexanone	ND	10	ug/L	
Methyl t-Butyl Ether	ND	10	ug/L	

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	86	76	114
Toluene-d8	50 ug/L	102	88	110
4-Bromofluorobenzene	50 ug/L	86	86	115

ANALYZED BY: GLT

DATE/TIME: 01/23/99 20:10:00

METHOD: 8260 Water, Volatile Organics

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-02

Rice Operating Company
122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-1

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 12:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	5	ug/L
Acenaphthylene	ND	5	ug/L
Aniline	ND	5	ug/L
Anthracene	ND	5	ug/L
Benzo(a)Anthracene	ND	5	ug/L
Benzo(b)Fluoranthene	ND	5	ug/L
Benzo(k)Fluoranthene	ND	5	ug/L
Benzo(a)Pyrene	ND	5	ug/L
Benzoic Acid	ND	25	ug/L
Benzo(g,h,i)Perylene	ND	5	ug/L
Benzyl alcohol	ND	5	ug/L
4-Bromophenylphenyl ether	ND	5	ug/L
Butylbenzylphthalate	ND	5	ug/L
di-n-Butyl phthalate	ND	5	ug/L
Carbazole	ND	5	ug/L
4-Chloroaniline	ND	5	ug/L
bis(2-Chloroethoxy)Methane	ND	5	ug/L
bis(2-Chloroethyl)Ether	ND	5	ug/L
bis(2-Chloroisopropyl)Ether	ND	5	ug/L
4-Chloro-3-Methylphenol	ND	5	ug/L
2-Chloronaphthalene	ND	5	ug/L
2-Chlorophenol	ND	5	ug/L
4-Chlorophenylphenyl ether	ND	5	ug/L
Chrysene	ND	5	ug/L
Dibenz(a,h)Anthracene	ND	5	ug/L
Dibenzofuran	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
3,3'-Dichlorobenzidine	ND	10	ug/L
2,4-Dichlorophenol	ND	5	ug/L
Diethylphthalate	ND	5	ug/L
2,4-Dimethylphenol	ND	5	ug/L
Dimethyl Phthalate	ND	5	ug/L
4,6-Dinitro-2-Methylphenol	ND	25	ug/L
2,4-Dinitrophenol	ND	25	ug/L
2,4-Dinitrotoluene	ND	5	ug/L
2,6-Dinitrotoluene	ND	5	ug/L

METHOD: 8270C, Semivolatile Organics - Water
(continued on next page)



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-02

Rice Operating Company

SAMPLE ID: MW-1

ANALYTICAL DATA (continued)			
PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	5	ug/L
bis(2-Ethylhexyl) Phthalate	ND	5	ug/L
Fluoranthene	ND	5	ug/L
Fluorene	ND	5	ug/L
Hexachlorobenzene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Hexachloroethane	ND	5	ug/L
Hexachlorocyclopentadiene	ND	5	ug/L
Indeno(1,2,3-cd) Pyrene	ND	5	ug/L
Isophorone	ND	5	ug/L
2-Methylnaphthalene	ND	5	ug/L
2-Methylphenol	ND	5	ug/L
4-Methylphenol	ND	5	ug/L
Naphthalene	ND	5	ug/L
2-Nitroaniline	ND	25	ug/L
3-Nitroaniline	ND	25	ug/L
4-Nitroaniline	ND	25	ug/L
Nitrobenzene	ND	5	ug/L
2-Nitrophenol	ND	5	ug/L
4-Nitrophenol	ND	25	ug/L
N-Nitrosodiphenylamine	ND	5	ug/L
N-Nitroso-Di-n-Propylamine	ND	5	ug/L
Di-n-Octyl Phthalate	ND	5	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	5	ug/L
Phenol	ND	5	ug/L
Pyrene	ND	5	ug/L
Pyridine	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	5	ug/L

METHOD: 8270C, Semivolatile Organics - Water
(continued on next page)

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-02

Rice Operating Company

SAMPLE ID: MW-1

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	50 ug/L	74	35	114
2-Fluorobiphenyl	50 ug/L	78	43	116
Terphenyl-d14	50 ug/L	60	33	141
Phenol-d5	75 ug/L	21	10	110
2-Fluorophenol	75 ug/L	37	21	110
2,4,6-Tribromophenol	75 ug/L	65	10	123

ANALYZED BY: YL

DATE/TIME: 01/22/99 19:55:00

EXTRACTED BY: KL

DATE/TIME: 01/20/99 13:00:00

METHOD: 8270C, Semivolatile Organics - Water

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-01

Rice Operating Company
122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-2

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 11:20:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Liquid-liquid extraction SEMIVOLATILES Method 3520C *** Analyzed by: KL Date: 01/20/99 13:00:00	01/20/99			
Chloride Method 325.3 * Analyzed by: CV Date: 01/29/99 11:00:00	230	5	mg/L	
Carbonate, as CaCO ₃ Method SM 4500-CO ₂ D ** Analyzed by: TK Date: 01/19/99 16:20:00	ND	2	mg/L	
Bicarbonate, as CaCO ₃ Method SM 4500-CO ₂ D ** Analyzed by: TK Date: 01/19/99 16:20:00	322	2	mg/L	
pH Method 150.1 * Analyzed by: TK Date: 01/19/99 17:00:00	7.51		pH Units	
Resistivity Method 120.1 * Analyzed by: TK Date: 01/19/99 16:50:00	0.58	0.001	Mohms-cm	

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

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Hobbs, NM 88240
ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-2

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 11:20:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sulfate Method 375.4 * Analyzed by: TW Date: 01/28/99 13:30:00	372	25	mg/L
Specific Gravity ASTM D1429 Analyzed by: DS Date: 02/02/99 14:00:00	0.985		g/cm3
Total Dissolved Solids Method 160.1 * Analyzed by: DS Date: 02/05/99 10:00:00	1190	20	mg/L
Silver, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.01	mg/L
Aluminum, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	16.5	0.1	mg/L
Arsenic, Total Method 6010B *** Analyzed by: EG Date: 01/21/99 15:28:00	0.025	0.005	mg/L

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
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***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

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ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-2

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 11:20:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Barium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.970	0.005	mg/L
Calcium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	578	1	mg/L
Cadmium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.005	mg/L
Cobalt, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.01	mg/L
Chromium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.02	0.01	mg/L
Copper, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.02	0.01	mg/L

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-01

Rice Operating Company
122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-2

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 11:20:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Iron, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	11.6	0.02	mg/L
Mercury, Total Method 7470 A*** Analyzed by: AG Date: 01/20/99 14:50:00	ND	0.0002	mg/L
Potassium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	30	2	mg/L
Magnesium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	101	0.1	mg/L
Manganese, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.288	0.005	mg/L
Molybdenum, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.02	mg/L

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

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Rice Operating Company
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Hobbs, NM 88240
ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-2

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 11:20:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sodium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	171	0.5	mg/L
Nickel, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.02	mg/L
Acid Digestion-Aqueous, ICP Method 3010A *** Analyzed by: EE Date: 01/19/99 13:00:00	01/19/99		
Lead, Total Method 6010B *** Analyzed by: EG Date: 01/21/99 15:28:00	0.007	0.005	mg/L
Selenium, Total Method 6010B *** Analyzed by: EG Date: 01/21/99 15:28:00	ND	0.005	mg/L
Zinc, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.04	0.02	mg/L

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
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SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-2

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 11:20:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Benzene	17	5	ug/L
Bromobenzene	ND	5	ug/L
Bromochloromethane	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	10	ug/L
n-Butylbenzene	ND	5	ug/L
sec-Butylbenzene	ND	5	ug/L
tert-Butylbenzene	ND	5	ug/L
Carbon tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chlorodibromomethane	ND	5	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	10	ug/L
2-Chlorotoluene	ND	5	ug/L
4-Chlorotoluene	ND	5	ug/L
1,2-Dibromo-3-chloropropane	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Dibromomethane	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
Dichlorodifluoromethane	ND	10	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
cis-1,2-Dichloroethene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
1,3-Dichloropropane	ND	5	ug/L
2,2-Dichloropropane	ND	5	ug/L
1,1-Dichloropropene	ND	5	ug/L
Ethylbenzene	7	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Isopropylbenzene	ND	5	ug/L
p-Isopropyltoluene	ND	5	ug/L
Methylene chloride	ND	5	ug/L

METHOD: 8260 Water, Volatile Organics
(continued on next page)

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-01

Rice Operating Company

SAMPLE ID: MW-2

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
Naphthalene	ND	5	ug/L
n-Propylbenzene	ND	5	ug/L
Styrene	ND	5	ug/L
1,1,1,2-Tetrachloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Toluene	ND	5	ug/L
1,2,3-Trichlorobenzene	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Trichlorofluoromethane	ND	5	ug/L
1,2,3-Trichloropropane	ND	5	ug/L
1,2,4-Trimethylbenzene	ND	5	ug/L
1,3,5-Trimethylbenzene	ND	5	ug/L
Vinyl chloride	ND	10	ug/L
Xylenes (total)	12	5	ug/L
Acetone	ND	100	ug/L
Carbon Disulfide	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Butanone	ND	20	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
2-Chloroethylvinylether	ND	10	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Methyl t-Butyl Ether	ND	10	ug/L

SURROGATES

AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	84	76 114
Toluene-d8	50 ug/L	104	88 110
4-Bromofluorobenzene	50 ug/L	90	86 115

ANALYZED BY: GLT

DATE/TIME: 01/23/99 19:42:00

METHOD: 8260 Water, Volatile Organics

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



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Certificate of Analysis No. H9-9901761-01

Rice Operating Company
122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-2

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 11:20:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	5	ug/L
Acenaphthylene	ND	5	ug/L
Aniline	ND	5	ug/L
Anthracene	ND	5	ug/L
Benzo(a)Anthracene	ND	5	ug/L
Benzo(b)Fluoranthene	ND	5	ug/L
Benzo(k)Fluoranthene	ND	5	ug/L
Benzo(a)Pyrene	ND	5	ug/L
Benzoic Acid	ND	25	ug/L
Benzo(g,h,i)Perylene	ND	5	ug/L
Benzyl alcohol	ND	5	ug/L
4-Bromophenylphenyl ether	ND	5	ug/L
Butylbenzylphthalate	ND	5	ug/L
di-n-Butyl phthalate	ND	5	ug/L
Carbazole	ND	5	ug/L
4-Chloroaniline	ND	5	ug/L
bis(2-Chloroethoxy)Methane	ND	5	ug/L
bis(2-Chloroethyl)Ether	ND	5	ug/L
bis(2-Chloroisopropyl)Ether	ND	5	ug/L
4-Chloro-3-Methylphenol	ND	5	ug/L
2-Chloronaphthalene	ND	5	ug/L
2-Chlorophenol	ND	5	ug/L
4-Chlorophenylphenyl ether	ND	5	ug/L
Chrysene	ND	5	ug/L
Dibenz(a,h)Anthracene	ND	5	ug/L
Dibenzofuran	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
3,3'-Dichlorobenzidine	ND	10	ug/L
2,4-Dichlorophenol	ND	5	ug/L
Diethylphthalate	ND	5	ug/L
2,4-Dimethylphenol	ND	5	ug/L
Dimethyl Phthalate	ND	5	ug/L
4,6-Dinitro-2-Methylphenol	ND	25	ug/L
2,4-Dinitrophenol	ND	25	ug/L
2,4-Dinitrotoluene	ND	5	ug/L
2,6-Dinitrotoluene	ND	5	ug/L

METHOD: 8270C, Semivolatile Organics - Water
(continued on next page)



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-01

Rice Operating Company

SAMPLE ID: MW-2

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	5	ug/L
bis(2-Ethylhexyl) Phthalate	ND	5	ug/L
Fluoranthene	ND	5	ug/L
Fluorene	ND	5	ug/L
Hexachlorobenzene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Hexachloroethane	ND	5	ug/L
Hexachlorocyclopentadiene	ND	5	ug/L
Indeno (1,2,3-cd) Pyrene	ND	5	ug/L
Isophorone	ND	5	ug/L
2-Methylnaphthalene	ND	5	ug/L
2-Methylphenol	ND	5	ug/L
4-Methylphenol	ND	5	ug/L
Naphthalene	ND	5	ug/L
2-Nitroaniline	ND	25	ug/L
3-Nitroaniline	ND	25	ug/L
4-Nitroaniline	ND	25	ug/L
Nitrobenzene	ND	5	ug/L
2-Nitrophenol	ND	5	ug/L
4-Nitrophenol	ND	25	ug/L
N-Nitrosodiphenylamine	ND	5	ug/L
N-Nitroso-Di-n-Propylamine	ND	5	ug/L
Di-n-Octyl Phthalate	ND	5	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	5	ug/L
Phenol	ND	5	ug/L
Pyrene	ND	5	ug/L
Pyridine	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	5	ug/L

METHOD: 8270C, Semivolatile Organics - Water
(continued on next page)

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-01

Rice Operating Company

SAMPLE ID: MW-2

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	50 ug/L	78	35	114
2-Fluorobiphenyl	50 ug/L	82	43.	116
Terphenyl-d14	50 ug/L	56	33	141
Phenol-d5	75 ug/L	21	10	110
2-Fluorophenol	75 ug/L	37	21	110
2,4,6-Tribromophenol	75 ug/L	73	10	123

ANALYZED BY: YL

DATE/TIME: 01/22/99 19:24:00

EXTRACTED BY: KL

DATE/TIME: 01/20/99 13:00:00

METHOD: 8270C, Semivolatile Organics - Water

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-03

Rice Operating Company
122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-3

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 14:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Liquid-liquid extraction SEMIVOLATILES Method 3520C *** Analyzed by: KL Date: 01/20/99 13:00:00	01/20/99		
Chloride Method 325.3 * Analyzed by: CV Date: 01/29/99 11:00:00	195	5	mg/L
Carbonate, as CaCO ₃ Method SM 4500-CO ₂ D ** Analyzed by: TK Date: 01/19/99 16:20:00	ND	2	mg/L
Bicarbonate, as CaCO ₃ Method SM 4500-CO ₂ D ** Analyzed by: TK Date: 01/19/99 16:20:00	370	2	mg/L
pH Method 150.1 * Analyzed by: TK Date: 01/19/99 17:00:00	7.51		pH Units
Resistivity Method 120.1 * Analyzed by: TK Date: 01/19/99 16:50:00	0.53	0.001	Mohms-cm

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance
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Certificate of Analysis No. H9-9901761-03

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122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-3PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 14:30:00
DATE RECEIVED: 01/19/99**ANALYTICAL DATA**

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sulfate Method 375.4 * Analyzed by: TW Date: 01/28/99 13:30:00	483	25	mg/L
Specific Gravity ASTM D1429 Analyzed by: DS Date: 02/02/99 14:00:00	0.996		g/cm3
Total Dissolved Solids Method 160.1 * Analyzed by: DS Date: 02/05/99 10:00:00	1340	40	mg/L
Silver, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.01	mg/L
Aluminum, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	32.7	0.1	mg/L
Arsenic, Total Method 6010B *** Analyzed by: EG Date: 01/21/99 15:28:00	0.028	0.005	mg/L

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
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Hobbs, NM 88240
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DATE: 02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
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SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-3

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 14:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Barium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	3.91	0.005	mg/L	
Calcium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	1255	1	mg/L	
Cadmium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.005	mg/L	
Cobalt, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	ND	0.01	mg/L	
Chromium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.03	0.01	mg/L	
Copper, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.02	0.01	mg/L	

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
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SAMPLE ID: MW-3

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 14:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Iron, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	26.4	0.02	mg/L
Mercury, Total Method 7470 A*** Analyzed by: AG Date: 01/20/99 14:50:00	ND	0.0002	mg/L
Potassium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	8	2	mg/L
Magnesium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	76.5	0.1	mg/L
Manganese, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.535	0.005	mg/L
Molybdenum, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.03	0.02	mg/L

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
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SAMPLE ID: MW-3

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 14:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sodium, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	310	0.5	mg/L
Nickel, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.05	0.02	mg/L
Acid Digestion-Aqueous, ICP Method 3010A *** Analyzed by: EE Date: 01/19/99 13:00:00	01/19/99		
Lead, Total Method 6010B *** Analyzed by: EG Date: 01/21/99 15:28:00	0.013	0.005	mg/L
Selenium, Total Method 6010B *** Analyzed by: EG Date: 01/21/99 15:28:00	ND	0.005	mg/L
Zinc, Total Method 6010B *** Analyzed by: JM Date: 01/20/99 10:00:00	0.04	0.02	mg/L

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
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02/09/99

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SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-3

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 14:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Benzene	ND	5	ug/L
Bromobenzene	ND	5	ug/L
Bromochloromethane	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	10	ug/L
n-Butylbenzene	ND	5	ug/L
sec-Butylbenzene	ND	5	ug/L
tert-Butylbenzene	ND	5	ug/L
Carbon tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chlorodibromomethane	ND	5	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	10	ug/L
2-Chlorotoluene	ND	5	ug/L
4-Chlorotoluene	ND	5	ug/L
1,2-Dibromo-3-chloropropane	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Dibromomethane	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
Dichlorodifluoromethane	ND	10	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
cis-1,2-Dichloroethene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
1,3-Dichloropropane	ND	5	ug/L
2,2-Dichloropropane	ND	5	ug/L
1,1-Dichloropropene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Isopropylbenzene	ND	5	ug/L
p-Isopropyltoluene	ND	5	ug/L
Methylene chloride	ND	5	ug/L

METHOD: 8260 Water, Volatile Organics
(continued on next page)



HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-03

Rice Operating Company

SAMPLE ID: MW-3

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
Naphthalene	ND	5	ug/L
n-Propylbenzene	ND	5	ug/L
Styrene	ND	5	ug/L
1,1,1,2-Tetrachloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Toluene	ND	5	ug/L
1,2,3-Trichlorobenzene	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Trichlorofluoromethane	ND	5	ug/L
1,2,3-Trichloropropane	ND	5	ug/L
1,2,4-Trimethylbenzene	ND	5	ug/L
1,3,5-Trimethylbenzene	ND	5	ug/L
Vinyl chloride	ND	10	ug/L
Xylenes (total)	ND	5	ug/L
Acetone	ND	100	ug/L
Carbon Disulfide	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Butanone	ND	20	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
2-Chloroethylvinylether	ND	10	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Methyl t-Butyl Ether	ND	10	ug/L

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	84	76	114
Toluene-d8	50 ug/L	106	88	110
4-Bromofluorobenzene	50 ug/L	86	86	115

ANALYZED BY: GLT

DATE/TIME: 01/23/99 20:38:00

METHOD: 8260 Water, Volatile Organics

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-03

Rice Operating Company
122 West Taylor
Hobbs, NM 88240
ATTN: F. Wesley Root

02/09/99

PROJECT: Jct. I-9 Hobbs SWD System
SITE: 09-T195-R38E, Lea County
SAMPLED BY: Rice Operating Company
SAMPLE ID: MW-3

PROJECT NO:
MATRIX: WATER
DATE SAMPLED: 01/16/99 14:30:00
DATE RECEIVED: 01/19/99

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	5	ug/L
Acenaphthylene	ND	5	ug/L
Aniline	ND	5	ug/L
Anthracene	ND	5	ug/L
Benzo(a)Anthracene	ND	5	ug/L
Benzo(b)Fluoranthene	ND	5	ug/L
Benzo(k)Fluoranthene	ND	5	ug/L
Benzo(a)Pyrene	ND	5	ug/L
Benzoic Acid	ND	25	ug/L
Benzo(g,h,i)Perylene	ND	5	ug/L
Benzyl alcohol	ND	5	ug/L
4-Bromophenylphenyl ether	ND	5	ug/L
Butylbenzylphthalate	ND	5	ug/L
di-n-Butyl phthalate	ND	5	ug/L
Carbazole	ND	5	ug/L
4-Chloroaniline	ND	5	ug/L
bis(2-Chloroethoxy)Methane	ND	5	ug/L
bis(2-Chloroethyl)Ether	ND	5	ug/L
bis(2-Chloroisopropyl)Ether	ND	5	ug/L
4-Chloro-3-Methylphenol	ND	5	ug/L
2-Chloronaphthalene	ND	5	ug/L
2-Chlorophenol	ND	5	ug/L
4-Chlorophenylphenyl ether	ND	5	ug/L
Chrysene	ND	5	ug/L
Dibenz(a,h)Anthracene	ND	5	ug/L
Dibenzofuran	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
3,3'-Dichlorobenzidine	ND	10	ug/L
2,4-Dichlorophenol	ND	5	ug/L
Diethylphthalate	ND	5	ug/L
2,4-Dimethylphenol	ND	5	ug/L
Dimethyl Phthalate	ND	5	ug/L
4,6-Dinitro-2-Methylphenol	ND	25	ug/L
2,4-Dinitrophenol	ND	25	ug/L
2,4-Dinitrotoluene	ND	5	ug/L
2,6-Dinitrotoluene	ND	5	ug/L

METHOD: 8270C, Semivolatile Organics - Water
(continued on next page)



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-03

Rice Operating Company

SAMPLE ID: MW-3

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	5	ug/L
bis(2-Ethylhexyl) Phthalate	ND	5	ug/L
Fluoranthene	ND	5	ug/L
Fluorene	ND	5	ug/L
Hexachlorobenzene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Hexachloroethane	ND	5	ug/L
Hexachlorocyclopentadiene	ND	5	ug/L
Indeno (1,2,3-cd) Pyrene	ND	5	ug/L
Isophorone	ND	5	ug/L
2-Methylnaphthalene	ND	5	ug/L
2-Methylphenol	ND	5	ug/L
4-Methylphenol	ND	5	ug/L
Naphthalene	ND	5	ug/L
2-Nitroaniline	ND	25	ug/L
3-Nitroaniline	ND	25	ug/L
4-Nitroaniline	ND	25	ug/L
Nitrobenzene	ND	5	ug/L
2-Nitrophenol	ND	5	ug/L
4-Nitrophenol	ND	25	ug/L
N-Nitrosodiphenylamine	ND	5	ug/L
N-Nitroso-Di-n-Propylamine	ND	5	ug/L
Di-n-Octyl Phthalate	ND	5	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	5	ug/L
Phenol	ND	5	ug/L
Pyrene	ND	5	ug/L
Pyridine	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	5	ug/L

METHOD: 8270C, Semivolatile Organics - Water
(continued on next page)

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Certificate of Analysis No. H9-9901761-03

Rice Operating Company

SAMPLE ID: MW-3

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	50 ug/L	86	35	114
2-Fluorobiphenyl	50 ug/L	86	43	116
Terphenyl-d14	50 ug/L	56	33	141
Phenol-d5	75 ug/L	25	10	110
2-Fluorophenol	75 ug/L	45	21	110
2,4,6-Tribromophenol	75 ug/L	87	10	123

ANALYZED BY: YL

DATE/TIME: 01/22/99 20:27:00

EXTRACTED BY: KL

DATE/TIME: 01/20/99 13:00:00

METHOD: 8270C, Semivolatile Organics - Water

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.

QUALITY CONTROL
DOCUMENTATION

3A
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL

Contract:

Lab Code:

Case No.: 9901750 SAS No.:

SDG No.:

Matrix Spike - EPA Sample No.: 99-006 A/B

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50	0	56	112	61-145
Trichloroethene	50	0	52	104	71-120
Benzene	50	0	52	104	76-127
Toluene	50	0	53	106	76-125
Chlorobenzene	50	0	51	102	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
1,1-Dichloroethene	50	58	106	6	14	61-145
Trichloroethene	50	47	100	4	14	71-120
Benzene	50	50	104	0	11	76-127
Toluene	50	48	108	2	13	76-125
Chlorobenzene	50	48	102	0	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits due to matrix interferences

SPL Houston Labs

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: METHSPIKE-8260W
Level: LOW
Data Type: MS DATA
SpikeList File: 8260_water.spk
Sublist File: 8260_lcs.sub
Method File: /var/chem/n.i/n990123.b/n8260w.m
Misc Info: N023W1//N023CW1

Client SDG: n990123
Fraction: VOA
Client Smp ID: LCS
Operator: GLT
SampleType: METHSPIKE
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
8 1,1-Dichloroethene	50	53	106.00	61-145
29 Trichloroethene	50	52	104.00	71-120
25 Benzene	50	52	104.00	76-127
37 Toluene	50	53	106.00	76-125
45 Chlorobenzene	50	51	102.00	75-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 21 1,2-Dichloroethane	50	41	82.00	76-114
\$ 36 Toluene-d8	50	51	102.00	88-110
\$ 56 Bromofluorobenzene	50	43	86.00	86-115



SPL Blank QC Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

page 1

Matrix: Aqueous
Sample ID: VLBLK
Batch: N990123122720

Reported on: 01/25/99 17:44
Analyzed on: 01/23/99 10:55
Analyst: GLT

METHOD 8260/8240 N023B01

Compound	Result	Detection Limit	Units
Dichlorodifluoromethane	ND	10	ug/L
Chloromethane	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Bromomethane	ND	10	ug/L
Chloroethane	ND	10	ug/L
Trichlorofluoromethane	ND	5	ug/L
Acetone	ND	100	ug/L
1,1-Dichloroethene	ND	5	ug/L
Methylene Chloride	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Butanone	ND	20	ug/L
cis-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
2,2-Dichloropropane	ND	5	ug/L
Bromochloromethane	ND	5	ug/L
Chloroform	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,1-Dichloropropene	ND	5	ug/L
Benzene	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Dibromomethane	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
2-Chloroethylvinylether	ND	10	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L

Notes

ND - Not detected.



SPL Blank QC Report

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

page 2

Matrix: Aqueous
Sample ID: VLBLK
Batch: N990123122720

Reported on: 01/25/99 17:44
Analyzed on: 01/23/99 10:55
Analyst: GLT

METHOD 8260/8240 N023B01

Compound	Result	Detection Limit	Units
1,3-Dichloropropane	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
1,1,1,2-Tetrachloroethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Bromoform	ND	5	ug/L
Styrene	ND	5	ug/L
Xylene (Total)	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,2,3-Trichloropropane	ND	5	ug/L
Isopropylbenzene	ND	5	ug/L
Bromobenzene	ND	5	ug/L
N-Propylbenzene	ND	5	ug/L
2-Chlorotoluene	ND	5	ug/L
4-Chlorotoluene	ND	5	ug/L
1,3,5-Trimethylbenzene	ND	5	ug/L
tert-Butylbenzene	ND	5	ug/L
1,2,4-Trimethylbenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
sec-Butylbenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
p-Isopropyltoluene	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
n-Butylbenzene	ND	5	ug/L
1,2-Dibromo-3-Chloropropan	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
Naphthalene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
1,2,3-Trichlorobenzene	ND	5	ug/L
Methyl t-Butyl Ether	ND	10	ug/L

Notes

ND - Not detected.



SPL Blank QC Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

page 3

Matrix: Aqueous
Sample ID: VLBLK
Batch: N990123122720

Reported on: 01/25/99 17:44
Analyzed on: 01/23/99 10:55
Analyst: GLT

METHOD 8260/8240 N023B01

S u r r o g a t e	Result	QC Criteria	Units
1,2-Dichloroethane-d4	86	76-114	% Recovery
Toluene-d8	102	88-110	% Recovery
Bromofluorobenzene	88	86-115	% Recovery

Samples in Batch 9901761-01 9901761-02 9901761-03

Notes

ND - Not detected.

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL

Contract:

Lab Code:

Case No: [REDACTED]

SAS No: SDG No:

Matrix Spike - EPA

Sample No: [REDACTED]

Level (low/med):

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATIO (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC
Phenol	75	0	16	21	12-110
2-Chlorophenol	75	0	38	51	27-123
1,4-Dichlorobenzene	50	0	29	58	36- 97
N-Nitroso-di-n-propylamine	50	0	32	64	41-116
1,2,4-Trichlorobenzene	50	0	34	68	39- 110
4-Chloro-3-methylphenol	75	0	47	63	23-110
Acenaphthene	50	0	38	76	46-125
4-Nitrophenol	75	0	19	25	25-150
2,4-Dinitrotoluene	50	0	38	76	50-150
Pentachlorophenol	75	0	51	68	9-125
Pyrene	50	0	58	116	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATIO (ug/L)	MSD % REC #	% RPD #	QC LIMITS	
					RP	REC
Phenol	75	18	24	13	42	12-110
2-Chlorophenol	75	47	63	21	40	27-123
1,4-Dichlorobenzene	50	34	68	16	28	36- 97
N-Nitroso-di-n-propylamine	50	46	92	36	38	41-116
1,2,4-Trichlorobenzene	50	40	80	16	28	39-110
4-Chloro-3-methylphenol	75	56	75	17	42	23-110
Acenaphthene	50	45	90	17	31	46-125
4-Nitrophenol	75	19	25	0	50	25-150
2,4-Dinitrotoluene	50	44	88	15	50	50-150
Pentachlorophenol	75	56	75	10	50	9-125
Pyrene	50	62	124	7	31	26-127

Column to be used to flag recovery and RPD values with an asterisk

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits



SPL Blank QC Report

Matrix: Aqueous
Sample ID: BLANK
Batch: E990120042258

Reported on: 02/02/99 17:15
Analyzed on: 01/21/99 19:37
Analyst: YL

METHOD 8270 H020B03

C o m p o u n d	Result	Detection Limit	Units
Pyridine	ND	5	ug/L
Phenol	ND	5	ug/L
Aniline	ND	5	ug/L
bis(2-Chloroethyl) ether	ND	5	ug/L
2-Chlorophenol	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
Benzyl alcohol	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
2-Methylphenol	ND	5	ug/L
bis(2-chloroisopropyl) ethe	ND	5	ug/L
4-Methylphenol	ND	5	ug/L
N-Nitroso-di-n-propylamine	ND	5	ug/L
Hexachloroethane	ND	5	ug/L
Nitrobenzene	ND	5	ug/L
Isophorone	ND	5	ug/L
2-Nitrophenol	ND	5	ug/L
2,4-Dimethylphenol	ND	5	ug/L
Benzoic acid	ND	25	ug/L
bis(2-Chloroethoxy) methane	ND	5	ug/L
2,4-Dichlorophenol	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
Naphthalene	ND	5	ug/L
4-Chloroaniline	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
4-Chloro-3-methylphenol	ND	5	ug/L
2-Methylnaphthalene	ND	5	ug/L
Hexachlorocyclopentadiene	ND	5	ug/L
2,4,6-Trichlorophenol	ND	5	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2-Chloronaphthalene	ND	5	ug/L
2-Nitroaniline	ND	25	ug/L
Dimethylphthalate	ND	5	ug/L
2,6-Dinitrotoluene	ND	5	ug/L

Notes

ND - Not detected.



SPL Blank QC Report

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

page 2

Matrix: Aqueous
Sample ID: BLANK
Batch: E990120042258

Reported on: 02/02/99 17:15
Analyzed on: 01/21/99 19:37
Analyst: YL

METHOD 8270 H020B03

Compound	Result	Detection Limit	Units
Acenaphthylene	ND	5	ug/L
3-Nitroaniline	ND	25	ug/L
Acenaphthene	ND	5	ug/L
2,4-Dinitrophenol	ND	25	ug/L
4-Nitrophenol	ND	25	ug/L
Dibenzofuran	ND	5	ug/L
2,4-Dinitrotoluene	ND	5	ug/L
Diethylphthalate	ND	5	ug/L
4-Chlorophenyl-phenylether	ND	5	ug/L
Fluorene	ND	5	ug/L
4-Nitroaniline	ND	25	ug/L
4,6-Dinitro-2-methylphenol	ND	25	ug/L
n-Nitrosodiphenylamine	ND	5	ug/L
1,2-Diphenylhydrazine	ND	5	ug/L
4-Bromophenyl-phenylether	ND	5	ug/L
Hexachlorobenzene	ND	5	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	5	ug/L
Anthracene	ND	5	ug/L
Carbazole	ND	5	ug/L
Di-n-butylphthalate	ND	5	ug/L
Fluoranthene	ND	5	ug/L
Pyrene	ND	5	ug/L
Butylbenzylphthalate	ND	5	ug/L
3,3'-Dichlorobenzidine	ND	10	ug/L
Benzo[a]anthracene	ND	5	ug/L
Chrysene	ND	5	ug/L
bis(2-Ethylhexyl)phthalate	ND	5	ug/L
Di-n-octylphthalate	ND	5	ug/L
Benzo[b]fluoranthene	ND	5	ug/L
Benzo[k]fluoranthene	ND	5	ug/L
Benzo[a]pyrene	ND	5	ug/L
Indeno[1,2,3-cd]pyrene	ND	5	ug/L
Dibenz[a,h]anthracene	ND	5	ug/L

Notes

ND - Not detected.



SPL Blank QC Report

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

page 3

Matrix: Aqueous
Sample ID: BLANK
Batch: E990120042258

Reported on: 02/02/99 17:15
Analyzed on: 01/21/99 19:37
Analyst: YL

METHOD 8270 H020B03

C o m p o u n d	Result	Detection Limit	Units
Benzo[g,h,i]perylene	ND	5	ug/L

S u r r o g a t e	Result	QC Criteria	Units
Nitrobenzene-d5	74	35-114	% Recovery
2-Fluorobiphenyl	84	43-116	% Recovery
Terphenyl-d14	112	33-141	% Recovery
Phenol-d5	19	10-110	% Recovery
2-Fluorophenol	36	21-110	% Recovery
2,4,6-Tribromophenol	73	10-123	% Recovery

Samples in Batch 9901761-01 9901761-02 9901761-03

Notes

ND - Not detected.



Matrix: Water

Units: mg/L

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Date:012199 Time:1528 File Name: 0121PB6

Laboratory Control Sample

Element	Mth. Blank	True Value	Result	% Recovery	Lower Limit	Upper Limit
Silver						
Aluminum						
Arsenic	ND	4.00	4.29	107	3.20	4.80
Barium						
Beryllium						
Calcium						
Cadmium						
Cobalt						
Chromium						
Copper						
Iron						
Potassium						
Magnesium						
Manganese						
Sodium						
Nickel						
Lead	ND	2.00	2.07	103	1.60	2.40
Antimony						
Selenium	ND	4.00	4.26	106	3.20	4.80
Thallium						
Vanadium						
Zinc						

Work Orders in Batch

Work Order Fractions

99-01-761 01D-03D

Matrix Spike - Spike Duplicate Results

Work Order Spiked: 9901761-01D

Element	Sample Result	Spike Added	Matrix Spike Result	Matrix Spike Recovery	Matrix Spike Duplicate Result	Matrix Spike Duplicate Recovery	QC Limits % Recovery	Spike RPD %	QC Limits %
Silver									
Aluminum									
Arsenic	0.0249	2.0	1.921	94.8	1.949	96.2	80 120	1.5	20.0
Barium									
Beryllium									
Calcium									
Cadmium									
Cobalt									
Chromium									
Copper									
Iron									
Potassium									
Magnesium									
Manganese									
Sodium									
Nickel									
Lead	0.0073	1.0	0.8777	87.0	0.8826	87.5	80 120	0.6	20.0
Antimony									
Selenium	ND	2.0	1.869	93.5	1.883	94.2	80 120	0.7	20.0
Thallium									
Vanadium									
Zinc									

Checked: EG. 1/22/99



Matrix: Water

Units: mg/L

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Date: 012099 Time: 1000 File Name: 0120PB2

Laboratory Control Sample

Element	Mth. Blank	True Value	Result	% Recovery	Lower Limit	Upper Limit
Silver	ND	2.00	2.07	103	1.60	2.40
Aluminum	ND	2.00	2.03	101	1.60	2.40
Arsenic						
Barium	ND	2.00	2.01	100	1.60	2.40
Beryllium						
Calcium	ND	20.00	21.07	105	16.00	24.00
Cadmium	ND	2.00	2.07	104	1.60	2.40
Cobalt	ND	2.00	2.09	104	1.60	2.40
Chromium	ND	2.00	2.12	106	1.60	2.40
Copper	ND	2.00	2.05	102	1.60	2.40
Iron	ND	2.00	2.12	106	1.60	2.40
Potassium	ND	20.00	20.52	103	16.00	24.00
Magnesium	ND	20.00	20.37	102	16.00	24.00
Manganese	ND	2.00	2.04	102	1.60	2.40
Molybdenum	ND	2.00	2.12	106	1.60	2.40
Nickel	ND	2.00	2.09	104	1.60	2.40
Lead						
Antimony						
Selenium						
Thallium						
Vanadium						
Zinc	ND	2.00	2.07	103	1.60	2.40

Work Orders in Batch

Work Order Fractions

99-01-761 01D-03D

99-01-705 04B

99-01-734 01A

Matrix Spike - Spike Duplicate Results

Work Order Spiked: 9901761-01D

Element	Sample Result	Spike Added	Matrix Spike Result	Matrix Spike Recovery	Matrix Spike Duplicate Result	Matrix Spike Duplicate Recovery	QC Limits % Recovery	Spike RPD %	QC Limits %
Silver	ND	1.0	0.886	88.6	0.9046	90.5	80 120	2.1	20.0
Aluminum	16.53	1.0	20.81	428.0	21.15	462.0	80 120	7.6	20.0
Arsenic									
Barium	0.9704	1.0	1.857	88.7	1.856	88.6	80 120	0.1	20.0
Beryllium									
Calcium	578.2	100.0	665.8	87.6	677.8	99.6	80 120	12.8	20.0
Cadmium	ND	1.0	0.8877	88.8	0.9043	90.4	80 120	1.9	20.0
Cobalt	ND	1.0	0.8559	85.6	0.8698	87.0	80 120	1.6	20.0
Chromium	0.015	1.0	0.8921	87.7	0.9073	89.2	80 120	1.7	20.0
Copper	0.0248	1.0	0.9108	88.6	0.9355	91.1	80 120	2.7	20.0
Iron	11.58	1.0	13.38	180.0	13.5	192.0	80 120	6.5	20.0
Potassium	30.28	10.0	39.69	94.1	41.04	107.6	80 120	13.4	20.0
Magnesium	100.9	10.0	109.5	86.0	112.6	117.0	80 120	30.5	20.0
Manganese	0.2882	1.0	1.131	84.3	1.152	86.4	80 120	2.5	20.0
Molybdenum	ND	1.0	0.8831	88.3	0.8925	89.3	80 120	1.1	20.0
Nickel	ND	1.0	0.8679	86.8	0.8882	88.8	80 120	2.3	20.0
Lead									
Antimony									
Selenium									
Thallium									
Vanadium									
Zinc	0.0435	1.0	0.9025	85.9	0.9227	87.9	80 120	2.3	20.0

Spike Results Outside Method Limits

** Spike RPD Outside Method Limits

Elements Post Spiked: Ca (10x dilution)

Checked: *JM 1/21/99*



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 01/20/99

Analyzed on: 01/20/99

Analyst: AG

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Mercury, Total
Method 7470 A***

SPL Sample ID Number	Blank Value ug/L	LCS Concentration ug/L	Measured Concentration ug/L	% Recovery	QC Limits Recovery
LCS	ND	2.0	2.0	100	80 - 120

-9901533

Samples in batch:

9901761-01D 9901761-02D 9901761-03D

COMMENTS:

LCS= SPL ID# 94-452-49-12



Matrix: Water

Units: mg/L

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Date:012099 Time:1000 File Name: 0120PB4

Laboratory Control Sample

Element	Mth. Blank	True Value	Result	% Recovery	Lower Limit	Upper Limit
Silver						
Aluminum						
Arsenic						
Barium						
Beryllium						
Calcium						
Cadmium						
Cobalt						
Chromium						
Copper						
Iron						
Potassium						
Magnesium						
Manganese						
Sodium	ND	20.00	19.95	100	16.00	24.00
Nickel						
Lead						
Antimony						
Selenium						
Thallium						
Vanadium						
Zinc						

Work Orders in Batch

Work Order Fractions

99-01-761 01D-03D

Matrix Spike - Spike Duplicate Results

Work Order Spiked: 9901761-01D

Element	Sample Result	Spike Added	Matrix Spike Result	Matrix Spike Recovery	Matrix Spike Duplicate Result	Matrix Spike Duplicate Recovery	QC Limits % Recovery	Spike RPD %	QC Limits %
Silver									
Aluminum									
Arsenic									
Barium									
Beryllium									
Calcium									
Cadmium									
Cobalt									
Chromium									
Copper									
Iron									
Potassium									
Magnesium									
Manganese									
Sodium	171.3	10.0	175	37.0	*	181.4	101.0	80 120	92.8 ** 20.0
Nickel									
Lead									
Antimony									
Selenium									
Thallium									
Vanadium									
Zinc									

Spike Results Outside Method Limits
Spike RPD Outside Method Limits

Checked: Jm 2/5/99



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8880 INTERCHANGE DRIVE
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PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 01/31/99

Analyzed on: 01/29/99

Analyst: CV

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Chloride
Method 325.3 *

SPL Sample ID Number	Blank Value mg/L	LCS Concentration mg/L	Measured Concentration mg/L	% Recovery	QC Limits Recovery
LCS	ND	105.0	99.3	94.6	94 - 106

-9901837

Samples in batch:

9901409-01D	9901409-02D	9901409-03D	9901409-04D
9901410-01D	9901410-02D	9901410-03D	9901410-04D
9901411-01D	9901411-02D	9901411-03D	9901411-04D
9901761-01C	9901761-02C	9901761-03C	

COMMENTS:

LCS-SPL ID#94453222-14



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HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 01/31/99

Analyzed on: 01/29/99

Analyst: CV

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Chloride
Method 325.3 *

SPL Sample ID Number	Method Blank mg/L	Sample Result mg/L	Spike Added mg/L	Matrix Spike		Matrix Spike Duplicate		RPD (%)	QC LIMITS (Advisory)	
				Result mg/L	Recovery %	Result mg/L	Recovery %		RPD Max	% REC
9901761-01C	ND	46.1	50.0	95.7	99.2	95.7	99.2	0	5	92 -109

-9901836

Samples in batch:

9901409-01D 9901409-02D 9901409-03D 9901409-04D
9901410-01D 9901761-01C 9901761-02C 9901761-03C

COMMENTS:



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** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 01/19/99

Analyzed on: 01/19/99

Analyst: TK

This sample was randomly selected for use in the SPL quality control program. The results are as follows:

Carbonate, as CaCO_3
Method SM 4500-CO₂D **

-- DUPLICATE ANALYSIS --

SPL Sample ID	Original Sample Concentration mg/L	Duplicate Sample mg/L	RPD	RPD Max.
9901705-04A	ND	ND	0	5

-9901480

Samples in batch:

9901705-04A 9901761-01C 9901761-02C 9901761-03C

COMMENTS:



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** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 01/19/99

Analyzed on: 01/19/99

Analyst: TK

This sample was randomly selected for use in the SPL quality control program. The results are as follows:

Bicarbonate, as CaCO_3
Method SM 4500-CO₂D **

-- DUPLICATE ANALYSIS --

SPL Sample ID	Original Sample Concentration mg/L	Duplicate Sample mg/L	RPD	RPD Max.
9901705-04A	722.2	722.4	0	5

-9901479

Samples in batch:

9901705-04A 9901761-01C 9901761-02C 9901761-03C

COMMENTS:

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

**** SPL QUALITY CONTROL REPORT ****

Matrix: Aqueous

Reported on: 01/19/99

Analyzed on: 01/19/99

Analyst: TK

This sample was randomly selected for use in the SPL quality control program. The results are as follows:

pH
Method 150.1 *

-- DUPLICATE ANALYSIS --

SPL Sample ID	Original Sample Concentration pH Units	Duplicate Sample pH Units	RPD	RPD Max.
9901705-04A	6.87	6.86	0.1	1.0

-9901483

Samples in batch:

9901705-04A 9901761-01C 9901761-02C 9901761-03C

COMMENTS:

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

**** SPL QUALITY CONTROL REPORT ****

Matrix: Aqueous

Reported on: 01/19/99

Analyzed on: 01/19/99

Analyst: TK

This sample was randomly selected for use in the SPL quality control program. The results are as follows:

Resistivity
Method 120.1 *

-- DUPLICATE ANALYSIS --

SPL Sample ID	Original Sample Concentration Momhs-cm	Duplicate Sample Momhs-cm	RPD	RPD Max.
9901761-02C	0.74	0.74	0	1.0

-9901484

Samples in batch:

9901705-04A 9901761-01C 9901761-02C 9901761-03C

COMMENTS:



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 01/29/99

Analyzed on: 01/28/99

Analyst: TW

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Sulfate
Method 375.4 *

SPL Sample ID Number	Blank Value mg/L	LCS Concentration mg/L	Measured Concentration mg/L	% Recovery	QC Limits Recovery
LCS	ND	26.80	25.64	95.7	82 - 111

-9901785

Samples in batch:

9901408-01D	9901408-02D	9901408-03D	9901408-04D
9901416-01D	9901520-01D	9901761-01C	9901761-02C
9901761-03C			

COMMENTS:

SPL LCS#95535252-14



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 01/29/99

Analyzed on: 01/28/99

Analyst: TW

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Sulfate
Method 375.4 *

SPL Sample	Method	Sample	Spike	Matrix Spike		Matrix Spike Duplicate		RPD	QC LIMITS (Advisory)	
ID Number	Blank	Result	Added	Result	Recovery	Result	Recovery	(%)	RPD	% REC
	mg/L	mg/L	mg/L	mg/L	%	mg/L	%		Max	
9901408-01D	ND	8.58	10.00	18.17	95.9	18.61	100	4.2	9.5	84 -120

-9901784

Samples in batch:

9901408-01D 9901408-02D 9901408-03D 9901408-04D
9901416-01D 9901520-01D 9901761-01C 9901761-02C
9901761-03C

COMMENTS:

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

**** SPL QUALITY CONTROL REPORT ****

Matrix: Aqueous

Reported on: 02/02/99

Analyzed on: 02/02/99

Analyst: DS

This sample was randomly selected for use in the SPL quality control program. The results are as follows:

Specific Gravity
ASTM D1429

-- DUPLICATE ANALYSIS --

SPL Sample ID	Original Sample Concentration g/cm3	Duplicate Sample g/cm3	RPD	RPD Max.
9901761-01C	0.9849	0.9852	0	1.0

-9902059

Samples in batch:

9901761-01C 9901761-02C 9901762-03C

COMMENTS:

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

**** SPL QUALITY CONTROL REPORT ****

Matrix: Aqueous

Reported on: 02/09/99

Analyzed on: 02/05/99

Analyst: DS

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Total Dissolved Solids
Method 160.1 *

SPL Sample ID Number	Blank Value mg/L	LCS Concentration mg/L	Measured Concentration mg/L	% Recovery	QC Limits Recovery
LCS	nd	430.9	425	98.6	93 - 107

-9902251

Samples in batch:

9901761-01C 9901761-02C 9901761-03C

COMMENTS:

lcs= spl id#95535254-2



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8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 02/09/99

Analyzed on: 02/05/99

Analyst: DS

This sample was randomly selected for use in the SPL quality control program. The results are as follows:

Total Dissolved Solids
Method 160.1 *

-- DUPLICATE ANALYSIS --

SPL Sample ID	Original Sample Concentration mg/L	Duplicate Sample mg/L	RPD	RPD Max.
9901761-01C	1182	1186	0.3	5

-9902250

Samples in batch:

9901761-01C 9901761-02C 9901761-03C

COMMENTS:



SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No:

9901761

17210

page 1 of 2

Client Name: <u>Rice Operating Company</u>		matrix		bottle	size	pres.	Requested Analysis			
Address/Phone: <u>122 West Taylor, Hobbs, NM 88240</u>		SL = water S = soil SL = sludge O = other:		P = plastic A = amber glass V = vial	1 = 1 liter 4 = 4oz 40 = vial 8 = 8oz 16 = 16oz	1 = HCl 2 = HNO3 3 = H2SO4 O = other:	Number of Containers	VOC 8260	Mineral Pattern *	WQCC Metals *
Client Contact: <u>F. Wesley Root</u>		DATE		TIME	comp	grab				
Project Name: <u>Jet I-9</u>		1-16-99		11:20						
Project Number: <u>Hobbs SWD System</u>		1-16-99		11:20						
Project Location: <u>09-T195-R38E, Lea County, New Mexico</u>		1-16-99		11:20						
Invoice To: <u>Rice Operating Company</u>		1-16-99		11:20						
SAMPLE ID		1-16-99		12:30						
MW-2		1-16-99		12:30						
MW-2		1-16-99		12:30						
MW-2		1-16-99		12:30						
MW-2		1-16-99		12:30						
MW-1		1-16-99		12:30						
MW-1		1-16-99		12:30						
MW-1		1-16-99		12:30						
MW-1		1-16-99		12:30						
MW-3		1-16-99		14:30						
MW-3		1-16-99		14:30						

Client/Consultant Remarks: See Attached List for Analytical Parameters of Mineral Pattern & WQCC Metals

Requested TAT		Special Reporting Requirements		Fax Results		Raw Data		Special Detection Limits (specify):		Intact? ☐ Y ☐ N	
24hr ☐	72hr ☐	Standard QC ☐	Level 3 QC ☐	Level 4 QC ☐	Level 4 QC ☐	Level 4 QC ☐	Level 4 QC ☐	Level 4 QC ☐	Level 4 QC ☐	Temp: <u>3C</u>	PM review (initial): <u>EB</u>
1. Relinquished by Sample: <u>See 51140</u>		1. Relinquished by Sample: <u>See 51140</u>		1. Relinquished by Sample: <u>See 51140</u>		1. Relinquished by Sample: <u>See 51140</u>		1. Relinquished by Sample: <u>See 51140</u>		2. Received by: <u>11/8/99 14:00</u>	
3. Relinquished by: <u>See 51140</u>		3. Relinquished by: <u>See 51140</u>		3. Relinquished by: <u>See 51140</u>		3. Relinquished by: <u>See 51140</u>		3. Relinquished by: <u>See 51140</u>		4. Received by: <u>11/8/99 14:00</u>	
5. Relinquished by: <u>See 51140</u>		5. Relinquished by: <u>See 51140</u>		5. Relinquished by: <u>See 51140</u>		5. Relinquished by: <u>See 51140</u>		5. Relinquished by: <u>See 51140</u>		6. Received by Laboratory: <u>See 51140</u>	

☒ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901
☐ 459-Hughes Drive, Traverse City, MI 49684 (616) 947-5777
☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

**SPL, Inc.**

SPL Workorder No:

7211

Analysis Request & Chain of Custody Record

Client Name: Rice Operating Company

Address/Phone: 122 West Taylor Hobbs, NM 88240

Client Contact: F. Wesley Rest

Project Name: J-1 7-9

Project Number: Hobbs SWD System

Project Location: 09-T195-R38E, Lea County, New Mexico

Invoice To: Rice Operating Company

[illegible]

Laboratory remarks:

Client/Consultant Remarks: See Attached List for Analytical Parameters of Mineral Pattern & WQIC Metals

Intact? ☐ Y ☐ N
Temp: 36

Requested TAT

24hr 72hr

48hr **Standard**

Other

1. Relinquished by Sampler:

3. Relinquished by:

S. Relinquished by:

Special Reporting Requirements Fax Results Raw Data

Standard QC Level 3 QC Level 4 QC

1. Relinquished by Sampler:	date
-----------------------------	------

Special Detection Limits (specify):

time	2. Received by:
------	-----------------

time

time	6. Received by 1
------	------------------

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459-Hughes Drive, Traverse City, MI 49684 (616) 947-5777

500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 1-19-99	Time: 1000
------------------	---------------

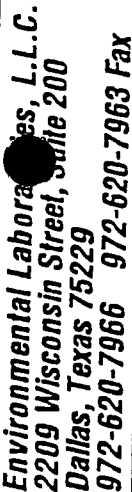
SPL Sample ID: 9901761

		Yes	No
1	Chain-of-Custody (COC) form is present.	—	
2	COC is properly completed.	—	
3	If no, Non-Conformance Worksheet has been completed.		
4	Custody seals are present on the shipping container.	—	
5	If yes, custody seals are intact.	—	
6	All samples are tagged or labeled.	✓	
7	If no, Non-Conformance Worksheet has been completed.		
8	Sample containers arrived intact	—	
9	Temperature of samples upon arrival:	3 C	
10	Method of sample delivery to SPL:	SPL Delivery	
		Client Delivery	
		FedEx Delivery (airbill #)	808198483322
		Other:	
11	Method of sample disposal:	SPL Disposal	—
		HOLD	
		Return to Client	

Name: R. H. H.	Date: 1-19-99
-------------------	------------------

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
Client Sample ID: B-3		Sample Number: 98-3544-001						
Date Sampled: 10/21/98		Sample Matrix: Liquid						
Time Sampled: 9:30		Sampled By: SL						
EPA 8021B	Benzene	14200	µg/L	50	10/23/98	10/23/98	DWT	50
	Toluene	<50	µg/L	50	10/23/98	10/23/98	DWT	50
	Ethyl benzene	1310	µg/L	50	10/23/98	10/23/98	DWT	50
	Xylenes (Total)	780	µg/L	150	10/23/98	10/23/98	DWT	50
	Total BTEX (Calculated)	16290	µg/L		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	108%	74-116%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	102%	80-151%		10/23/98	10/23/98	DWT	1
EPA 160.1	Total Dissolved Solids	1710	mg/L	10	10/28/98	10/28/98	SM	1
SM 4500CLB	Chloride	230	mg/L	50	10/28/98	10/28/98	AJ	10

Client Sample ID: B-4		Sample Number: 98-3544-002						
Date Sampled: 10/21/98		Sample Matrix: Liquid						
Time Sampled: 10:55		Sampled By: SL						
EPA 8021B	Benzene	618	µg/L	5	10/23/98	10/23/98	DWT	5
	Toluene	331	µg/L	5	10/23/98	10/23/98	DWT	5
	Ethyl benzene	182	µg/L	5	10/23/98	10/23/98	DWT	5
	Xylenes (Total)	226	µg/L	15	10/23/98	10/23/98	DWT	5
	Total BTEX (Calculated)	1357	µg/L		10/23/98	10/23/98	DWT	1
	**Quality Control Surrogate				10/23/98	10/23/98	DWT	1
	Difluorobenzene (SS)	110%	74-116%		10/23/98	10/23/98	DWT	1
	4-Bromofluorobenzene (SS)	111%	80-151%		10/23/98	10/23/98	DWT	1
EPA 160.1	Total Dissolved Solids	5460	mg/L	10	10/28/98	10/28/98	SM	1
SM 4500CLB	Chloride	2400	mg/L	250	10/28/98	10/28/98	AJ	50



Analysis(es) Requested

Client Name	Price Consulting Company	Phone No.	505 352 1174
Client Address	1226 West Taylor	Fax No.	505 357 1171
Billing Address		State	760
		City	

Purchase Order No.

To ensure proper billing, please reference quotation number.

Project Manager

Site Location
JACKSON COUNTY HOLDINGS

[illegible]

Sampled By

1	Matrix:	A - Air Bag; C - Charcoal Tube; L -
2	Container Type:	V - 40ml VOA Vial; G - Amber or Glass
3	Preservative:	HCl; Hydrosulphuric Acid; HNO ₃ ; Nitric

TAT

Client Project ID

Certes Job Number

Standard: Date Required 10/30

34

RUSH: Date Required:

Relinquished by Sampler

Date / /

Relinquished by

Date _____

Relinquished by

Date 12/1/01

NOTE: By submitting these samples, you agree to the terms and conditions contained in Certes' Schedule of Fees. Certes cannot accept verbal changes. Please FAX written changes to (972) 620-2963

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
4725 Ripley Avenue, Suite A

Lubbock, Texas 79424
El Paso, Texas 79922

800•378•1296
888•588•3443
E-Mail: lab@traceanalysis.com

806•794•1296
915•585•3443

FAX 806•794•1298
FAX 915•585•4944

Analytical and Quality Control Report

Tom Larson
Geraghty & Miller, Inc.
1030 Andrews Highway, Suite 120
Midland, TX 79701

Report Date: 7/13/99

Project Number: MT000591.0001
Project Name: N/A
Project Location: Rice (Hobbs)

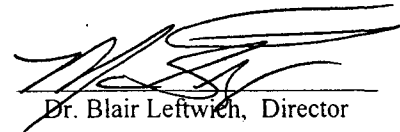
Order ID Number: 99070811

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
127806	MW-2	Water	7/7/99	11:00	7/8/99
127807	MW-1	Water	7/7/99	11:45	7/8/99

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 3 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.


Dr. Blair Leftwich, Director

Report Date: 7/13/99
MT000591.0001

Order ID Number: 99070811
N/A

Page Number: 2 of 3
Rice (Hobbs)

Analytical Results Report

Sample Number: 127806
Description: MW-2

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Benzene (mg/L)		0.289	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
Toluene (mg/L)		<0.005	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
Ethylbenzene (mg/L)		0.061	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
M,P,O-Xylene (mg/L)		0.008	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
Total BTEX (mg/L)		0.358	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
Surrogate		Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #	
TFT (mg/L)		0.623	5	0.1	125	72 - 128	RC	PB01429	QC01776	
4-BFB (mg/L)		0.619	5	0.1	124	72 - 128	RC	PB01429	QC01776	

Sample Number: 127807
Description: MW-1

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Benzene (mg/L)		0.262	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
Toluene (mg/L)		0.01	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
Ethylbenzene (mg/L)		0.286	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
M,P,O-Xylene (mg/L)		0.131	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
Total BTEX (mg/L)		0.689	5	S 8021B	7/8/99	7/8/99	RC	PB01429	QC01776	0.001
Surrogate		Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #	
TFT (mg/L)		0.642	5	0.1	128	72 - 128	RC	PB01429	QC01776	
4-BFB (mg/L)		0.626	5	0.1	125	72 - 128	RC	PB01429	QC01776	

Quality Control Report Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Benzene (mg/L)		<0.001	0.001	7/8/99	PB01429	QC01776
Toluene (mg/L)		<0.001	0.001	7/8/99	PB01429	QC01776
Ethylbenzene (mg/L)		<0.001	0.001	7/8/99	PB01429	QC01776
M,P,O-Xylene (mg/L)		<0.001	0.001	7/8/99	PB01429	QC01776
Total BTEX (mg/L)		<0.001	0.001	7/8/99	PB01429	QC01776

Quality Control Report Lab Control Spikes and Duplicate Spike

Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS MTBE (mg/L)	<0.001	1	0.1	0.117	117		80 - 120	0 - 20	QC01776
LCS Benzene (mg/L)	<0.001	1	0.1	0.115	115		80 - 120	0 - 20	QC01776
LCS Toluene (mg/L)	<0.001	1	0.1	0.116	116		80 - 120	0 - 20	QC01776
LCS Ethylbenzene (mg/L)	<0.001	1	0.1	0.116	116		80 - 120	0 - 20	QC01776
LCS M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.349	116		80 - 120	0 - 20	QC01776
Standard Surrogate		Dil.	Spike Amount	Result	% Rec.		% Rec. Limit		QC Batch #
LCS TFT (mg/L)		1	0.1	0.100	100		72 - 128		QC01776
LCS 4-BFB (mg/L)		1	0.1	0.103	103		72 - 128		QC01776
LCSD MTBE (mg/L)	<0.001	1	0.1	0.115	115	2	80 - 120	0 - 20	QC01776
LCSD Benzene (mg/L)	<0.001	1	0.1	0.117	117	2	80 - 120	0 - 20	QC01776
LCSD Toluene (mg/L)	<0.001	1	0.1	0.117	117	1	80 - 120	0 - 20	QC01776
LCSD Ethylbenzene (mg/L)	<0.001	1	0.1	0.117	117	1	80 - 120	0 - 20	QC01776
LCSD M,P,O-Xylene (mg/L)	<0.001	1	0.3	0.353	118	1	80 - 120	0 - 20	QC01776
Standard Surrogate		Dil.	Spike Amount	Result	% Rec.		% Rec. Limit		QC Batch #
LCSD TFT (mg/L)		1	0.1	0.102	102		72 - 128		QC01776
CSD 4-BFB (mg/L)		1	0.1	0.104	104		72 - 128		QC01776

Quality Control Report Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Benzene (mg/L)		0.1	0.093	93	80 - 120	7/8/99	QC01776
ICV	Toluene (mg/L)		0.1	0.092	92	80 - 120	7/8/99	QC01776
ICV	Ethylbenzene (mg/L)		0.1	0.091	91	80 - 120	7/8/99	QC01776
ICV	M,P,O-Xylene (mg/L)		0.3	0.262	87	80 - 120	7/8/99	QC01776
CCV (1	Benzene (mg/L)		0.1	0.113	113	80 - 120	7/8/99	QC01776
CCV (1	Toluene (mg/L)		0.1	0.114	114	80 - 120	7/8/99	QC01776
CCV (1	Ethylbenzene (mg/L)		0.1	0.110	110	80 - 120	7/8/99	QC01776
CCV (1	M,P,O-Xylene (mg/L)		0.3	0.330	110	80 - 120	7/8/99	QC01776



Laboratory Task Order No. _____

CHAIN-OF-CUSTODY RECORD

Page 6 of 1

49070811

Project Number MT000591, 0001

Project Location Rice (Hobbs)

Laboratory TRACE

Sampler(s)/Affiliation McKee AGM
Midland

DATE/TIME
SAMPLED

SAMPLE IDENTITY			Code	Sampled	TIME Lab ID	1-2						TOTAL
MW-2	L	7-7-99	1100	3	127806							3
MW-1	L	7-7-99	1145	3	127807							3
BTX 40mg (HCL) Trace												

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/
Containers

Relinquished by: <u>Helen deKorsten</u>	Organization: <u>Trace Analysis</u>	Date: <u>7/7/99</u> Time: <u>1200</u>	Seal Intact? Yes No N/A
Received by: <u>Helen deKorsten</u>	Organization: <u>Trace Analysis</u>	Date: <u>7/07/99</u> Time: <u>5:00 PM</u>	Seal Intact? Yes No N/A
Relinquished by: <u>Helen deKorsten</u>	Organization: <u>Trace Analysis</u>	Date: <u>7/07/99</u> Time: <u>6:30 PM</u>	Seal Intact? Yes No N/A
Received by: _____	Organization: _____	Date: <u>7/7/99</u> Time: _____	Seal Intact? Yes No N/A

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☒ Common Carrier McKee AGM 159-384-594

☒ Lab Courier ☐ Other MA Fowl 7/13



6/01 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1296
4725 Hitley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Sharon Hall
Geraghty & Miller, Inc.
1030 Andrews Highway, Suite 120
Midland, TX 79701

Report Date: 9/8/99

Project Number: MT000591.0002
Project Name: N/A
Project Location: Rice (Hobbs, NM)

Order ID Number: 99090329

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
131289	MW-4	Water	9/2/99	-	9/3/99

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

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Dr. Blair Leftwich, Director

Cation-Anion Balance Sheet

DATE: 9/9/99

Sample #	Calcium ppm	Magnesium ppm	Sodium ppm	Potassium ppm	Alkalinity ppm	Sulfate ppm	Chloride ppm	Nitrate ppm	Fluoride ppm	TDS ppm	EC µM-OS/cm
131289	112	23	146	3.6	220.00	160	100	2.8	4.1	70	

Sample #	Calcium in meq/L	Magnesium in meq/L	Sodium in meq/L	Potassium in meq/L	Alkalinity in meq/L	Sulfate in meq/L	Chloride in meq/L	Nitrate in meq/L	Fluoride in meq/L	Total Cations in meq/L	Total Anions in meq/L	Percentage Error
131289	5.59	1.88	6.35	0.08	4.40	3.75	2.82	0.207031	0.215824	11.92	11.38	20.0185364

EC/Cation	EC/Anion
392.4558	1139.1455

TDS/EC	TDS/Cat	TDS/Anion
0.00701	0.55	0.68

range 0 to 0

needs to be 0.55-0.77

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite D
1726 Ripley Avenue, Suite A

Lubbock, Texas 79424
El Paso, Texas 79922

000-370-1230
888-688-1111

000-734-1230
015-615-1111

FAX (800)-794-1791
FAX (915)-505-4044

E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR GERAGHTY & MILLER

Attention: Sharon Miller
1030 Andrews Hwy., Suite 120
Midland, Texas 79261

September 8, 1999

Receiving Date: 09/03/99

Sample Type: Water

Project No: MT000001.0000

Project Loc: Rice Hobbs, NM

Sampling Date: 08/09/99

Sample Condition: I & C

Sample Received by: VVV

Project Name: N/A

TA#	Field Code	Cl (mg/L)	NO3-N* (mg/L)	SO4 (mg/L)	F (mg/L)
T131289	MW-4	100	2.9	180	4.1
ICV		11.50	4.62	11.60	1.08
CCV		11.53	4.65	11.61	1.08
Reporting Limit		0.5	0.2	0.5	0.1
Prep Date:		09/07/99	09/07/99	09/07/99	09/08/99
Analysis Date:		09/07/99	09/07/99	09/07/99	09/08/99
RFD		0	1	1	1
% Extraction Accuracy		90	97	93	98
% Instrument Accuracy		92	92	93	106

METHODS: EPA 300.0, 340.2

CHEMIST: JS

TOTAL Cl SPIKE: 625 mg/L

TOTAL NO3-N SPIKE: 250 mg/L

TOTAL SO4 SPIKE: 625 mg/L

TOTAL F SPIKE: 5.0 mg/L

TOTAL Cl CV: 12.5 mg/L

TOTAL NO3-NCV: 5.0 mg/L

TOTAL SO4 CV: 12.5 mg/L

TOTAL F CV: 1.0 mg/L

JS

9-8-99

APPENDIX E

RECOVERY WELL VOLUMES

Hobbs S.W.D SYSTEM NE 1/4 SE 1/4 SEC - T19S R38E LEA COUNTY NEW MEXICO

ICE EMPLOYEE	STURGIN	STURGIN	STURGIN	STURGIN	STURGIN	STURGIN	STURGIN	STURGIN	STURGIN	STURGIN	STURGIN
DATE	JAN 18 99	JAN 19 99	JAN 20 99	JAN 21 99	JAN 22 99	JAN 23 99	JAN 24 99	JAN 25 99	JAN 26 99	JAN 27 99	JAN 28 99
ME - START	8:30	8:30	8:30	8:30	8:30	8:30	8:30	9:00	8:30	8:45	8:30
ME - END	10:30	9:30	9:30	9:30	9:30	9:30	9:30	10:30	9:30	9:15	9:00
WELL NO.	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1
WELL CONSTRUCTION	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT
WELL SECURITY	LOCK	LOCK	LOCK	LOCK	LOCK	LOCK	LOCK	LOCK	LOCK	LOCK	LOCK
PURGING TIME	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DEPTH TO WATER (FT)	31'6"	31'7"	31'7"	31'7"	31'6"	31'7"	31'7"	31'7"	31'6"	31'7"	31'7"
FSH THICKNESS (FT)	1/2"	2 1/2"	2 1/2"	1/2"	1/2"	3"	1"	1"	1"	1"	2"
OLUME WATER RECOVERED	1/2 pint	2 pint	2 pint	2 pint	2 pint	2 pint	2 pint	2 pint	2 pint	2 pint	2 pint
PURGING TECHNIQUE	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL
SAMPLING TIME	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SAMPLING TECHNIQUE	SEPARATED OIL & WATER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WATER TEMPERATURE °F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WATER pH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SPECIFIC CONDUCTANCE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

WELL CONDITIONS:

DATE: 15.5.02

Wobbs SWD SYSTEM NE 1/4 SE 1/4 SEC - T19S R38E LEA County New Mexico

ATTENTION COMMANDS:

✓

Hobbs S.W.D. SYSTEM NE 1/4 SE 1/4 SEC - T19S R38E LEA COUNTY NEW MEXICO

ICE EMPLOYEE	STURGILL	STURGILL	STURGILL	STURGILL	STURGILL	STURGILL	STURGILL	STURGILL	STURGILL
DATE	3-4-99	3-5-99	3-10-99	3-11-99	3-15-99	3-16-99	3-17-99	3-22	
ME - START	8:30	8:30	8:30	8:30	8:45	8:00	9:00	9:00	
ME - END	9:00	9:00	9:00	9:00	9:15	8:30	9:30	9:30	
WELL NO.	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	
WELL CONSTRUCTION	FLUSH mount	FLUSH mount	FLUSH mount	FLUSH mount	FLUSH mount	FLUSH mount	FLUSH mount	FLUSH mount	
WELL SECURITY	locked	locked	locked	locked	locked	locked	locked	locked	
FLUSHING TIME	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
DEPTH TO WATER (FT)	31"5	31"4'	31"6'	31"6'	31"7'	31"6'	31"6'	31"5'	
FSH THICKNESS (FT)	2.5'	2'	1.5'	2'	2.5'	2'	2'	2"	
STUMED WATER RECOVERED	1/2 pt	1/2 pt	1/2 pt	1/2 pt	1/2 pt	1/2 pt	1/2 pt	1/2 pt	
VOLUME FSH RECOVERED	2 FLOZ	1.5 FLOZ	1 FLOZ	1.5 FLOZ	2 FLOZ	2 FLOZ	2 FLOZ	2 FLOZ	
FLUSHING TECHNIQUE	MANUAL Bailor	MANUAL Bailor	MANUAL Bailor	MANUAL Bailor	MANUAL Bailor	MANUAL Bailor	MANUAL Bailor	MANUAL Bailor	
SAMPLING TIME	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SAMPLING TECHNIQUE	Seperator Dilute Water								
WATER TEMPERATURE °F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
WATER pH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SPECIFIC CONDUCTANCE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

WATER CONDITIONS:

SIGNATURE:

I-9

Hobbs SWD SYSTEM NE 1/4 SE 1/4 SEC. - T19S R38E LEA COUNTY New Mexico

RICE EMPLOYEE	J. Sturgill	J. Sturgill	J. Sturgill	J. Sturgill	J. Sturgill	J. Sturgill	J. Sturgill	J. Sturgill	J. Sturgill
DATE	3-30	4-1	4-5	4-6	4-12	4-19	4-23	4-26	5-7
TIME - START	8:00	8:15	8:00	9:15	9:00	8:45	10:15	9:00	10:00
TIME - END	8:45	9:00	8:45	10:00	9:30	9:50	10:35	10:00	10:30
WELL NO.	I-9 RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1	RW-1
WELL CONSTRUCTION	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT	FLUSH MOUNT
WELL SECURITY	LOCKED	LOCKED	LOCKED	LOCKED	LOCKED	LOCKED	LOCKED	LOCKED	LOCKED
PURGING TIME	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DEPTH TO WATER (ft)	31.6	31.7	31.7	31.6	31.5	31.5	31.6	31.6	31.5
FSH THICKNESS (ft)	4"	4"	5"	4"	5"	5"	5"	5"	5"
VOLUME WATER RECOVERED	1/2 pt	1/2 pt	1/2 pt	1/2 pt	1/2 pt	1/2 pt	1/2 pt	2 qals	3 qals
VOLUME FSH RECOVERED	3 FLOZ	3 FLOZ	4 FLOZ	3.5 FLOZ	4 FLOZ	4.5 FLOZ	5 FLOZ	14 FLOZ	20 FLOZ
PURGING TECHNIQUE	MANUAL BAILING	MANUAL BAILING	MANUAL BAILING	MANUAL BAILING	MANUAL BAILING	MANUAL BAILING	MANUAL BAILING	MANUAL BAILING	MANUAL BAILING
SAMPLING TIME	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SAMPLING TECHNIQUE	SEPARATION OF WATER	SEPARATION OF WATER	SEPARATION OF WATER	SEPARATION OF WATER	SEPARATION OF WATER	SEPARATION OF WATER	SEPARATION OF WATER	SEPARATION OF WATER	SEPARATION OF WATER
WATER TEMPERATURE °F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WATER pH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SPECIFIC CONDUCTANCE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

WEATHER CONDITIONS:

REMARKS:

ARCADIS

Appendix D

Stage 2 Abatement Report

JUNCTION I-9

Stage 2 Abatement Report

Rice Operating Company
Hobbs, New Mexico

ARCADIS

Sharon E. Hall

Sharon E. Hall
Site Evaluation Department Manager

Junction I-9 Stage 2
Abatement Report
Rice Operating Company
Hobbs, New Mexico

Prepared for:
Rice Operating Company

Prepared by:
ARCADIS G&M, Inc.
1004 N. Big Spring Street
Suite 300
Midland,
Texas 79701
Tel 432.687.5400
Fax 432.687.5401

Our Ref.:
MT000643.0001.00001

Date:
July 14, 2004

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- 2 Soil Sample Analytical Results
- 3 Groundwater Analytical Results

Figures

- 1 Site Location Map

Appendices

- A Photographs
- B Well and Sample Locations and Laboratory Analytical Results
- C Proctor and Density Test Results

**Stage 2 Abatement
Report**Rice Operating Company
Hobbs, New Mexico**1. Introduction**

The subject site is a former pipeline connection point on the Rice Operating Company (ROC) Hobbs Salt Water Disposal System. The pipeline transports produced water from oil and gas leases to a permitted well for disposal by subsurface injection. The site is located in southwest Hobbs, New Mexico approximately 0.6 miles south of the intersection of Grimes Street and Stanolind Road (Section 9, T19S-R38E, Lea County) (Figure 1).

2. Site History

A pipeline leak was discovered and repaired at the subject site on June 5, 1998. Notification of an unauthorized release was submitted to the New Mexico Oil Conservation Division (NMOCD) District I Office located in Hobbs, New Mexico. A Stage I Abatement Plan was submitted to the NMOCD on January 19, 1999. Interim abatement site activities including assessment of impacts to soil and groundwater and excavation of impacted soil were conducted from August 24, 1998 to September 2, 1999. Recovery of phase-separated hydrocarbons (PSH) from groundwater has been conducted from January 18 to May 7, 1999. A total of four monitor wells, one recovery well and nine boreholes was installed at the subject site. A Stage 1 Abatement Plan report detailing the results of the Stage 1 Abatement investigation was submitted to the NMOCD on September 10, 1999.

A Stage 2 Abatement Plan Proposal was submitted to the NMOCD on January 10, 2000. Following requests for additional information from the NMOCD, three Revised Stage 2 Abatement Plan proposals were submitted. (December 13, 2000, March 31, 2001 and December 13, 2001). A final Stage 2 Abatement Plan Proposal revision was requested by ROC on April 5, 2004 and approved by the NMOCD on June 4, 2004.

Copies of the plan, revisions and NMOCD approvals are on file at the NMOCD office in Santa Fe. The approved Stage 2 Abatement Plan Proposal is as follows:

- Sampling monitor wells 1, 3, 4 and the McNeil well quarterly for four quarters and analyzing for benzene, toluene, ethylbenzene and xylenes (BTEX), general quality and New Mexico Water Quality Control Commission (WQCC) metals. Based on sample results for four quarters, the sampling frequency will be reviewed and may be revised.

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- Sampling will be discontinued when eight quarters of sample results indicate that BTEX concentrations are below WQCC Title 20, Chapter 6, Part 2 standards.
- Excavation of soils in the area where hydrocarbons were detected in groundwater until the soil associated with the PSH is removed. When groundwater is encountered, excavation will be discontinued just below the depth where groundwater is encountered.
- Installation of a 12-15" compacted clay layer that meets or exceeds 95% of a Proctor Test ASTM-D-98 and permeability equal to or less than 1×10^{-7} cm/sec over the area excavated to groundwater. The liner extended 10 feet in all directions beyond the excavated area.
- Following backfilling, installation of a 12-15" compacted clay layer that meets or exceeds 95% of a Proctor Test ASTM-D-98 and permeability equal to or less than 1×10^{-7} cm/sec over the entire excavated area at a depth of 6-7 feet below ground surface (bgs).
- Excavation of soils exceeding total petroleum hydrocarbon (TPH), BTEX, benzene and chloride concentrations of 100 milligrams per kilogram (mg/kg), 50 mg/kg, 10 mg/kg and 250 mg/kg, respectively.
- Backfilling of blended soils not exceeding TPH, BTEX, benzene and chloride concentrations of 100 mg/kg, 50 mg/kg, 10 mg/kg and 1,099 mg/kg, respectively.
- Grading of the site to prevent ponding of rain water.

3. Geology and Hydrogeology

The Ogallala Formation is the principal source of groundwater in the subject area. Depth to groundwater in Lea County ranges from approximately 12 to approximately 300 feet bgs. The Ogallala consists of predominantly coarse fluvial conglomerate and sandstone and fine-grained Eolian siltstone and clay. Where present in the subject area, the Ogallala unconformably overlies Triassic redbeds. The regional and site groundwater gradient is to the south/southeast.

Depth to groundwater at the subject site is approximately 36 bgs. Groundwater elevations measured in the monitor wells at the subject site are shown in Table 1.

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Table 1
GROUNDWATER ELEVATIONS
Junction I-9 Site
HOBBS, NEW MEXICO

MONITORING WELL	TOP OF CASING (feet)*	DATE	DEPTH TO GROUNDWATER (feet)*	WATER ELEVATION (feet)*
MW-1	3595.37	01/12/99	31.75	3563.62
MW-1	3595.37	01/16/99	32.04	3563.33
MW-1	3595.37	08/31/99	29.03	3566.34
MW-1	3595.37	03/02/04	36.78	3558.59
MW-2	3595.58	01/12/99	31.82	3563.76
MW-2	3595.58	01/16/99	32.04	3563.54
MW-2	3595.58	08/31/99	28.89	3566.69
MW-2	3595.58	03/02/04	Dry	-
MW-3	3595.62	01/12/99	30.58	3565.04
MW-3	3595.62	01/06/99	31.85	3563.77
MW-3	3595.62	08/31/99	26.24	3569.38
MW-3	3595.62	03/02/04	35.58	3560.04
MW-4	3595.15	09/02/99	28.98	3566.17
MW-4	3595.15	03/02/04	36.80	3558.35

*Based on survey data provided by Rice Operating Company. Used surveyed benchmark = top of casing on MW-3.

4. Stage 2 Abatement Field Activities

Stage 2 Abatement field activities were conducted between September 15, 2000 and October 3, 2000 and September 26, 2003 and February 4, 2004. Stage 2 Abatement field activities included sampling of three monitoring wells and an agricultural well, excavation of impacted soils, installation of an upper and lower liner and backfilling and grading of the site. All field activities were performed in accordance with the Stage 2 Abatement Plan Proposal and revisions as approved by the NMOCD. Photographs of field activities are included in Appendix A.

Stage 2 Abatement
ReportRice Operating Company
Hobbs, New Mexico**4.1 Soil Excavation**

Stage 2 excavation activities were performed at the site between September 15, 2000 and October 3, 2000 and September 26, 2003 and February 4, 2004. Excavation activities were continued in the area where hydrocarbons were detected on the groundwater until the soil associated with the PSH was removed. Soil in this area was excavated to 30-32' bgs. When groundwater was encountered, excavation was discontinued just below the depth where groundwater was encountered in order to maintain safe and practical excavation of soils. PSH was recovered with absorbent material where possible. Soil excavation continued until no visible staining of the soils occurred and no photoionization detector (PID) readings were observed. Soil samples were collected to confirm that impacted soils had been removed and that TPH, BTEX, benzene and chloride concentrations did not exceed the concentrations as approved for the Stage 2 Abatement Plan. Confirmation sample results and PID readings are shown in Table 2. The area of excavation and sample locations are shown in the figures included in Appendix B. Laboratory analysis is included in Appendix B.

A 12-15" compacted clay layer was installed according to NMOCD clay layer specifications (meet or exceed 95% of a Proctor Test ASTM-D-698 and permeability equal to or less than 1×10^{-7} cm/sec) over the area excavated to the groundwater interface in order to inhibit downward migration of constituents and to protect the groundwater interface that was exposed. Once the excavation was backfilled, an additional compacted clay layer was installed (to NMOCD specifications) approximately 6-7 feet below bgs over the entire excavation in order to inhibit downward migration of potential constituents in soils below the compacted clay layer. Liner design specifications were submitted to the OCD on March 30, 2001. Proctor and Density test results are included in Appendix C.

Approximately 11,000 loose cubic yards of impacted soils were disposed at an NMOCD-approved facility during initial Stage 2 Abatement activities. All remaining excavated soils, between 70,000 and 80,000 cubic yards, were blended with overburden/replacement soils and returned to the excavation as backfill. TPH, BTEX, benzene and chloride concentrations in the blended backfill material did not exceed the concentrations as approved for the Stage 2 Abatement Plan.

Following excavation the site was graded to prevent ponding of water and seeded with 11 pounds of Homsted, 11 pounds of Reclamation mix and 2 pounds of salt bush.

4.2 Sampling of Monitor Wells

A total of four monitor wells and one recovery well were installed in the subject area. An additional existing well referred to as the McNeil well has been added to the monitor well sampling program. Monitor well MW-2 was dry and, therefore, not sampled in the March 2004 sampling event. The recovery well was removed during excavation activities. Well locations are shown in the figures included in Appendix B.

Groundwater samples were collected from MW-1, MW-2 and MW-3 on January 16, 1999 and analyzed for volatile organics, semi-volatile organics, general chemistry and metals using USEPA Methods 8260, 8270C, 325.3, 4500, 150.1, 120.1, 375.4, 160.1, and 6010B.

MW-1 and MW-2 were resampled on July 7, 1999 to determine if BTEX concentrations were representative of downgradient aquifer conditions. The groundwater samples were submitted for analysis for BTEX using USEPA Method 8021B.

MW-4 was sampled on September 2, 1999 and analyzed for volatile organics, semi-volatile organics, general chemistry and metals using USEPA Methods 8260, 8270C, 325.3, 4500, 150.1, 120.1, 375.4, 160.1 and 6010B.

MW-1, MW-3, MW-4 and the McNeil well were sampled on March 2, 2004 and analyzed for volatile organics, gasoline range organics, diesel range organics and total hydrocarbon, die organics, general chemistry and metals using USEPA Methods 8260B, 8015M, 310.2M, 340.1, 325.3, 4500, 150.1, 120.1, 375.4, 160.1 and 7470A and 6010B. Laboratory analysis for March 2, 2004 sampling event is included in Appendix B. Groundwater analytical results are summarized in Table 3.

Benzene was detected in the samples collected from MW-1 and MW-2 on January 16, 1999 and July 7, 1999 at a concentration of 0.008 milligrams per liter (mg/L), 0.017 mg/L, 0.262 mg/L and 0.289 mg/L, respectively. Toluene was detected in the samples collected from MW-1 on July 7, 1999 at a concentration of 0.01 mg/L. Ethylbenzene was detected in the samples collected from MW-1 and MW-2 on January 16, 1999 and July 7, 1999 at a concentration of 0.032 mg/L, 0.007 mg/L, 0.286 mg/L and 0.061 mg/L, respectively. Xylenes were detected in the samples collected from MW-1 and MW-2 on January 16, 1999 and July 7, 1999 at a concentration of 0.012 mg/L, 0.012 mg/L, 0.131 mg/L and 0.008 mg/L, respectively. 1,2,4-trimethylbenzene was detected

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in the January 1999 sample collected from MW-1 at a concentration of 0.007 mg/L. No other analyzed organic compounds were detected.

Naturally-occurring inorganic analytes (metals, chlorides, pH, sulfate, TDS, calcium, potassium, bicarbonate, manganese and sodium) were detected in the groundwater samples collected from MW-1, MW-2, MW-3 and MW-4.

No hydrocarbons (TPH or BTEX) were detected in any of the wells during the March 2004 groundwater sampling event. Metals analysis indicates a decrease in metals concentrations since the July and September 1999 sampling. Aluminum and lead were detected at concentrations in excess of New Mexico Water Quality Control Commission (WQCC) standards; however, the concentrations of these compounds have decreased since the wells were last sampled. Boron was detected at a concentration in excess of the WQCC standard. Boron has not previously been analyzed. Total dissolved solids and sodium were detected at a concentration above the WQCC standard, and chlorides were detected above the WQCC standard in one well, MW-3.

No free product is evidenced at the site. During excavation activities the site was excavated to groundwater in the source area. No product was evidenced in the excavation.

5. Conclusions

Soils exceeding TPH, BTEX, benzene and chloride concentrations of 100 mg/kg, 50 mg/kg, 10 mg/kg and 250 mg/kg, respectively have been excavated and two clay liners installed as described in this report. Backfill material (blended soils) concentrations did not exceed TPH, BTEX, benzene and chloride concentrations of 100 mg/kg, 50 mg/kg, 10 mg/kg and 1,099 mg/kg, respectively. The site has been graded to prevent ponding of rainwater.

No hydrocarbons (TPH or BTEX) were detected in any of the wells during the March 2004 groundwater sampling event. Metals analysis indicates a decrease in metals concentrations since the July and September 1999 sampling. Aluminum and lead were detected at concentrations in excess of WQCC standards; however, the concentrations of these compounds have decreased since the wells were last sampled. Boron was detected at a concentration in excess of the WQCC standard. Boron has not previously been analyzed. Total dissolved solids and sodium were detected at a concentration

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above the WQCC standard, and chlorides were detected above the WQCC standard in one well, MW-3.

Rice Operating Company
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No free product is evidenced at the site. During excavation activities the site was excavated to groundwater in the source area. No measurable product was evidenced in the excavation.

ROC will continue groundwater sampling of Monitor Well 1, 3, 4 and the McNeil well quarterly for four quarters and analyze for BTEX, general quality and WQCC metals. Based on sample results for four quarters the sampling frequency will be reviewed and may be revised.

Sampling will be discontinued when eight quarters of sample results indicate that BTEX concentrations are below WQCC Title 20, Chapter 6, Part 2 standards.

6. References

Groundwater Handbook; United States Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information; 1992.

Hydrology and Hydrochemistry of the Ogallala Aquifer, Southern High Plains, Texas Panhandle and Eastern New Mexico; Report Number 177; Bureau of Economic Geology; 1988.

Hydrogeochemistry and Water Resources of the Lower Dockum Group in the Texas Panhandle and Eastern New Mexico; Report Number 161; Bureau of Economic Geology; 1986.

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart I.

Junction I-9 Release Site, Stage 1 Abatement Report (Site Assessment Investigation); ARCADIS Geraghty and Miller; September 10, 1999

ARCADIS

Table 2
Soil Analytical Results

Date	Lab Number	Comment	Lab GRO	Lab DRO	Lab CL	Field PID	Field CI	Benzene	Toluene	Ethyl Benzene	Total Xylenes
2/5/2004	H8435	Surface 5pt Comp	<10	<10	144			N/A	N/A	N/A	N/A
1/29/2004	H8420	1st 5' lift after clay liner @ 8' S. 1/2	<10	<10	112	NW 4.0	104	N/A	N/A	N/A	N/A
"						NE 4.8		N/A	N/A	N/A	N/A
"						Center 3.6		N/A	N/A	N/A	N/A
"						SW 6.0		N/A	N/A	N/A	N/A
"						SE 5.3		N/A	N/A	N/A	N/A
1/26/2004	H8407	1st 5' lift after clay liner @ 8' N. 1/2	<10	<10	176	3.4	183	N/A	N/A	N/A	N/A
"						2.9		N/A	N/A	N/A	N/A
"						2.7		N/A	N/A	N/A	N/A
"						2.2		N/A	N/A	N/A	N/A
"						2.3		N/A	N/A	N/A	N/A
1/12/2004	H8347	N 1/2 4th 5' lift	<10	<10	128	NE 3.3	126	N/A	N/A	N/A	N/A
"						NW 6.9		N/A	N/A	N/A	N/A
"						Center 3.6		N/A	N/A	N/A	N/A
"						SE 4.8		N/A	N/A	N/A	N/A
"						SW 2.0		N/A	N/A	N/A	N/A
1/6/2004	H8331	S 1/2 4th 5' lift	<10	<10	96	SE 13.8	105	N/A	N/A	N/A	N/A
"						NE 1.4		N/A	N/A	N/A	N/A
"						Center 4.5		N/A	N/A	N/A	N/A
"						NW 3.5		N/A	N/A	N/A	N/A
"						SW 9.3		N/A	N/A	N/A	N/A
12/30/2003	H8307	N. 3rd 5' lift comp	<10	<10	80	SE 5.3	129	N/A	N/A	N/A	N/A
"						NE 5.8		N/A	N/A	N/A	N/A
"						Center 10.3		N/A	N/A	N/A	N/A
"						SW 15.0		N/A	N/A	N/A	N/A
"						NW 3.3		N/A	N/A	N/A	N/A
12/23/2003	H8289	S. 3rd 5' lift by MWV #1	<10	<10	80	NW 3.4	101	N/A	N/A	N/A	N/A
"						NE 3.3		N/A	N/A	N/A	N/A
"						Center 10.9		N/A	N/A	N/A	N/A
"						SE 3.6		N/A	N/A	N/A	N/A
"						SW 37.2		N/A	N/A	N/A	N/A
12/17/2003	H8265	S. 2nd 5' lift by MWV #1	<10	34.2	96	NE 4.8	156	N/A	N/A	N/A	N/A

Table 2
Soil Analytical Results

Date	Lab Number	Comment	Lab GRO	Lab DRO	Lab CL	Field PID	Field CI	Benzene	Toluene	Ethyl Benzene	Total Xylenes
"						NW 5.2		N/A	N/A	N/A	N/A
"						Center 9.3		N/A	N/A	N/A	N/A
"						SE 6.3		N/A	N/A	N/A	N/A
"						SW 3.0		N/A	N/A	N/A	N/A
12/11/2003	H8246	S. 1st 5' lift 4th clay liner	<10	<10	128	3.2	101	N/A	N/A	N/A	N/A
"						3.5		N/A	N/A	N/A	N/A
"						3.8		N/A	N/A	N/A	N/A
"						3.7		N/A	N/A	N/A	N/A
"						1.9		N/A	N/A	N/A	N/A
12/9/2003	H8236	2nd lift 3rd clay liner	<10	<10	176	2.1	82	N/A	N/A	N/A	N/A
12/5/2003	H8230-1	S. wall 2pt comp	<10	<10	144			N/A	N/A	N/A	N/A
"	H8230-2	S. end @ GW @ 36'	<10	<10	80			N/A	N/A	N/A	N/A
"	H8230-3	5pt comp S. end bttm	<10	<10	96			N/A	N/A	N/A	N/A
12/4/2003	H8223-1	E. wall 5pt comp N. 1/2	<10	<10	80	1.1	115	N/A	N/A	N/A	N/A
"						0.5		N/A	N/A	N/A	N/A
"						0.4		N/A	N/A	N/A	N/A
"						0.6		N/A	N/A	N/A	N/A
"						1.3		N/A	N/A	N/A	N/A
12/4/2003	H8223-2	E. wall 5pt comp S. 1/2	<10	<10	112	4.4	95	N/A	N/A	N/A	N/A
"						0.5		N/A	N/A	N/A	N/A
"						1.1		N/A	N/A	N/A	N/A
"						0.5		N/A	N/A	N/A	N/A
"						1.3		N/A	N/A	N/A	N/A
12/2/2003	H8214	5pt comp 3rd liner 1st 5' lift	<10	<10	160	34.5	180	N/A	N/A	N/A	N/A
11/21/2003	H8202-1	4pt comp @ GW 36'	<10	<10	112	1.7	105	N/A	N/A	N/A	N/A
"	H8202-2	5pt base comp @ 30'	<10	<10	144	1.8	177	N/A	N/A	N/A	N/A
11/6/2003	H8148	GW backfill S. end	<10	<10	96			N/A	N/A	N/A	N/A
10/31/2003	H8133-1	S. wall comp E. end	<10	<10	32	2.5	110	N/A	N/A	N/A	N/A
"	H8133-2	S. wall comp W. end	<10	<10	16	2.6	105	N/A	N/A	N/A	N/A
10/30/2003	H8129	S. @ GW 36'	<10	<10	48	6.1	203.44	N/A	N/A	N/A	N/A
10/24/2003	H8113	Water table backfill	<10	<10	160	0.2		N/A	N/A	N/A	N/A
10/21/2003	H8102-1	7pt comp @ GW 36'	<10	28.8	80			<0.005	<0.005	<0.005	<0.015

Table 2
Soil Analytical Results

Date	Lab Number	Comment	Lab GRO	Lab DRO	Lab CL	Field PID	Field CI	Benzene	Toluene	Ethyl Benzene	Total Xylenes
"	H8102-2	W. wall S. 1/2 5pt comp	<10	16.7	96			<0.005	<0.005	<0.005	<0.015
"	H8102-3	W. wall N. 1/2 5pt comp	<10	<10	64			<0.005	<0.005	<0.005	<0.015
10/1/2003	H8053-1	Btm #1	<10	<10	64	1.3	200	<0.005	<0.005	<0.005	<0.015
"	H8053-2	Btm #2	<10	<10	64	1	234	<0.005	<0.005	<0.005	<0.015
"	H8053-3	Btm #3	<10	<10	253	2.5	366	<0.005	<0.005	<0.005	<0.015
"	H8053-4	Btm #4	<10	<10	448	2.3	680	<0.005	<0.005	<0.005	<0.015
"	H8053-5	Btm #5	<10	<10	112	0.7	231	<0.005	<0.005	<0.005	<0.015
	Lab ID	ELOT									
11/26/2003	0308006-01	N. wall E. 1/2 comp	<10	<10	<20			N/A	N/A	N/A	N/A
"	0308006-02	N. wall W. 1/2 comp	<10	<10	21.3			N/A	N/A	N/A	N/A
10/6/2003	0307653-01	1st lift #1	<10	26.4	35.4	1.3	185.55	N/A	N/A	N/A	N/A
"	0307653-02	1st lift #2	<10	<10	53.2	2	147.46	N/A	N/A	N/A	N/A
"	0307653-03	1st lift #3	<10	<10	35.4	0.7	360.89	N/A	N/A	N/A	N/A
"	0307653-04	1st lift #4	<10	12.1	35.4	1.5	153.76	N/A	N/A	N/A	N/A
"	0307653-05	1st lift #5	<10	18.9	35.4	1.7	154.46	N/A	N/A	N/A	N/A
"	0307653-06	W. wall bttm #6	<10	11.6	106	18.1	176.45	N/A	N/A	N/A	N/A
"	0307653-07	W. wall bttm #7	<10	<10	<20	1.6	162.35	N/A	N/A	N/A	N/A
"	0307653-08	W. wall bttm #8	<10	<10	<20	6.6	114.96	N/A	N/A	N/A	N/A
"	0307653-09	W. wall bttm #9	71.4	401	1770	96	2044.36	N/A	N/A	N/A	N/A

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name	MW-1			MW-2		MW-3		MW-4		McNeil Well
Date Sampled	1/16/1999	7/7/1999	3/2/2004	1/16/1999	7/7/1999	1/16/1999	3/2/2004	9/2/1999	3/2/2004	3/2/2004
Compound Name	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
VOCs										
Benzene	0.008	0.262	ND	0.017	0.289	ND	ND	ND	ND	ND
Bromobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Bromochloromethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Bromodichloromethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Bromoform	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Bromomethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
n-butylbenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
sec-butylbenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
tert-butylbenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Carbon tetrachloride	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Chlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Chlorodibromomethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Chloroethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Chloroform	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Chloromethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2-Chlorotoluene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4-Chlorotoluene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2-Dibromoethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Dibromomethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Dichlorodifluoromethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,1-Dichloroethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2-Dichloroethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,1-Dichloroethene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
cis-1,2-dichloroethene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
trans-1,2-dichloroethene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2-Dichloropropane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,3-Dichloropropane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2,2-Dichloropropane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,1-Dichloropropene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Ethylbenzene	0.032	0.286	ND	0.007	0.061	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Isopropylbenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
p-isopropyltoluene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Methylene chloride	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Naphthalene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
n-propylbenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Styrene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Tetrachloroethene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Toluene	ND	0.01	ND	ND	<0.005	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,1,1-Trichloroethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,1,2-Trichloroethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Trichloroethene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Trichlorofluoromethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2,3-Trichloropropane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2,4-Trimethylbenzene	0.007	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,3,5-Trimethylbenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Vinyl chloride	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Xylenes, total	0.012	0.131	ND	0.012	0.008	ND	ND	ND	ND	ND
Acetone	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Carbon disulfide	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Vinyl acetate	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2-Butanone	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2-Dichloroethene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2-Chloroethylvinylether	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4-Methyl-2-pentanone	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
cis-1,3-dichloropropene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
trans-1,3-dichloropropene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2-Hexanone	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Methyl tert butyl ether	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
SVOCs										
Acenaphthene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name Date Sampled	MW-1			MW-2		MW-3		MW-4		McNeil Well
	1/16/1999 (mg/L)	7/7/1999 (mg/L)	3/2/2004 (mg/L)	1/16/1999 (mg/L)	7/7/1999 (mg/L)	1/16/1999 (mg/L)	3/2/2004 (mg/L)	9/2/1999 (mg/L)	3/2/2004 (mg/L)	3/2/2004 (mg/L)
Acenaphthylene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Aniline	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Anthracene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Benzo(a)anthracene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Benzo(b)fluoranthene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Benzo(k)fluoranthene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Benzo(a)pyrene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Benzoic acid	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Benzo(g,h,i)perylene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Benzyl alcohol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4-Bromophenylphenyl ether	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Butylbenzylphthalate	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
di-n-butyl phthalate	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Carbazole	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4-Chloroaniline	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
bis(2-chloroethoxy)methane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
bis(2-chloroethyl)ether	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
bis(2-chloroisopropyl)ether	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4-Chloro-3-methylphenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2-Chloronaphthalene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2-Chlorophenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4-Chlorophenylphenyl ether	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Chrysene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Dibenz(a,h)anthracene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Dibenzofuran	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
3,3-Dichlorobenzidine	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2,4-Dichlorophenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Diethylphthalate	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2,4-Dimethylphenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Dimethyl phthalate	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2,4-Dinitrophenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2,4-Dinitrotoluene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2,6-Dinitrotoluene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2-Diphenylhydrazine	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
bis(2-ethylhexyl)phthalate	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Fluoranthene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Fluorene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Hexachlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Hexachlorobutadiene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Hexachloroethane	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Hexachlorocycloheptadiene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Isophorone	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2-Methylnaphthalene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2-Methylphenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4-Methylphenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Naphthalene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
2-Nitroaniline	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
3-Nitroaniline	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4-Nitroaniline	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Nitrobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2-Nitrophenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
4-Nitrophenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
N-nitrosodiphenylamine	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
N-nitroso-di-n-propylamine	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Di-n-octyl phthalate	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Pentachlorophenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Phenanthrene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Phenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Pyrene	ND	NA	NA	ND	NA	ND	NA	ND	NA	NA
Pyridine	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2,4,5-Trichlorophenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
2,4,6-Trichlorophenol	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA
Gasoline Range C6-C12	NA	NA	ND	NA	NA	NA	ND	NA	ND	ND
Diesel Range >C12-C35	NA	NA	ND	NA	NA	NA	ND	NA	ND	ND
TPH C6-C35	NA	NA	ND	NA	NA	NA	ND	NA	ND	ND

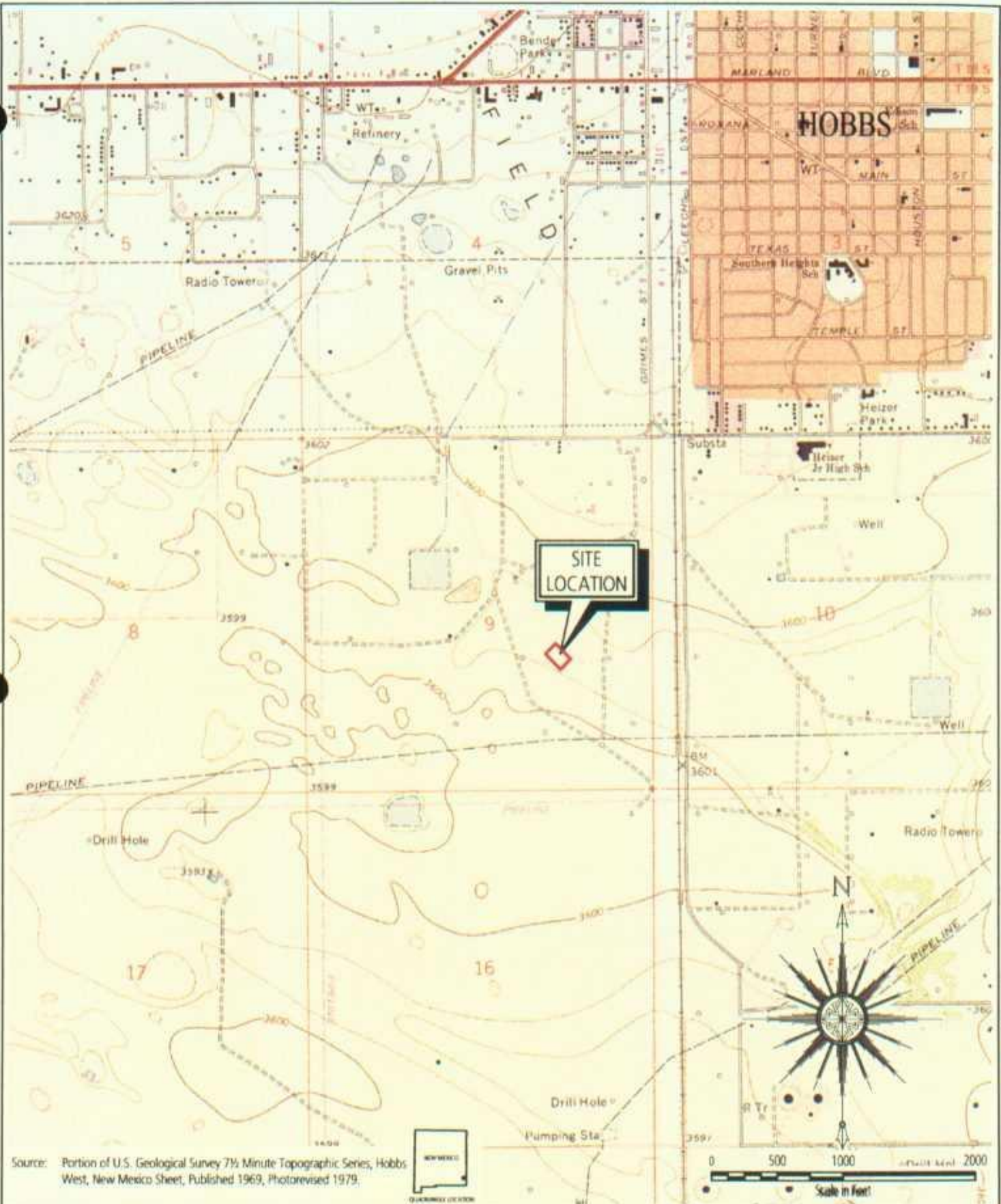
TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Well Name Date Sampled	MW-1			MW-2		MW-3		MW-4		McNeil Well
Compound Name	1/16/1999 (mg/L)	7/7/1999 (mg/L)	3/2/2004 (mg/L)	1/16/1999 (mg/L)	7/7/1999 (mg/L)	1/16/1999 (mg/L)	3/2/2004 (mg/L)	9/2/1999 (mg/L)	3/2/2004 (mg/L)	3/2/2004 (mg/L)
General Chemistry										
Resistivity	0.74	NA	NA	0.58	NA	0.53	NA	0.0009	NA	NA
Specific Gravity	0.982	NA	NA	0.985	NA	0.996	NA	NA	NA	NA
Chloride	128	NA	195	230	NA	195	319	100	164	81.5
Carbonate (CaCO ₃)	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND
Bicarbonate (CaCO ₃)	332	NA	478	322	NA	370	380	220	264	185
Hydroxide Alkalinity	NA	NA	ND	NA	NA	NA	ND	NA	ND	ND
pH	7.29	NA	7.22	7.51	NA	7.51	6.99	NA	7.03	7.52
Sulfate	318	NA	440	372	NA	483	499	180	367	69.2
Total dissolved solids	890	NA	1720	1190	NA	1340	1320	770	1040	468
Calcium	727	NA	728	578	NA	1255	944	93	100	25.9
Potassium	3	NA	4.45	30	NA	8	2.7	2.4	1.85	2.95
Sodium	144	NA	244	171	NA	310	200	124	129	104
Specific Conductance	NA	NA	1870	NA	NA	NA	1740	NA	1380	724
Fluoride	NA	NA	1.57	NA	NA	NA	1.91	NA	1.89	1.03
Nitrate as N	NA	NA	0.2	NA	NA	NA	0.1	NA	0.2	0.4
Metals										
Silver	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND
Aluminum	12.3	NA	7	16.5	NA	32.7	15.7	3.1	1.14	0.0491
Arsenic	0.019	NA	ND	0.025	NA	0.028	0.0127	0.03	ND	0.0467
Barium	0.87	NA	0.446	0.970	NA	3.91	1.87	0.11	0.0932	0.0543
Boron	NA	NA	1.38	NA	NA	NA	0.999	NA	0.592	0.127
Cadmium	ND	NA	ND	ND	NA	ND	ND	ND	0.0134	ND
Cobalt	ND	NA	J[0.0008]	ND	NA	ND	0.0047	ND	ND	ND
Chromium	ND	NA	J[0.0024]	0.02	NA	0.03	0.0139	ND	ND	ND
Copper	0.02	NA	0.0044	0.02	NA	0.02	ND	0.03	ND	ND
Iron	9.34	NA	5.58	11.6	NA	26.4	13.8	2.4	1.06	0.0609
Manganese	NA	NA	28.1	NA	NA	NA	38.8	NA	31.2	3.93
Mercury	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND
Manganese	0.214	NA	0.0741	0.288	NA	0.535	0.458	0.03	0.0524	0.0221
Molybdenum	ND	NA	ND	ND	NA	0.03	ND	0.02	ND	ND
Nickel	0.02	NA	ND	ND	NA	0.05	ND	0.1	ND	ND
Lead	0.005	NA	ND	0.007	NA	0.013	ND	0.008	ND	ND
Selenium	ND	NA	ND	ND	NA	ND	ND	0.02	ND	ND
Zinc	0.05	NA	0.098	0.04	NA	0.04	0.0342	0.04	0.0863	0.0331

All results are reported in milligrams per liter (mg/L)

NA - Not analyzed

ND - Not detected



Area Manager A. Schmidt Project Manager S. Hall Task Manager S. Hall Technical Review S. Tischer	ARCADIS 1004 North Big Spring Street Suite 300 Midland, TX 79701-3383 Tel: 432-687-5400 Fax: 432-687-5401 www.arcadis-us.com	Rice Operating Company Junction I-9 Release Site, 09-T19S-R38E, Hobbs SWD System Abatement Site Location Map Lea County, New Mexico	Project Number MT000643.0001 Drawing Date 09 July 2004 Figure 1
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ARCADIS

Appendix A

Photographs

ARCADIS



Excavation to groundwater in area where PSH was detected.



Excavation to groundwater in area where PSH was detected.

ARCADIS



Excavation to groundwater in area where PSH was detected.



Installation of lower liner.

ARCADIS



Installation of lower liner.



Excavation of sidewalls.

ARCADIS



Backfilling over lower liner.



Backfilling over lower liner.

ARCADIS



Backfilling.



Backfilling.

ARCADIS



Installation of upper liner.



Proctor testing of upper liner.

ARCADIS



Proctor testing of upper liner.



Backfilling over upper liner.

ARCADIS



Backfilling over upper liner.



Site grading.

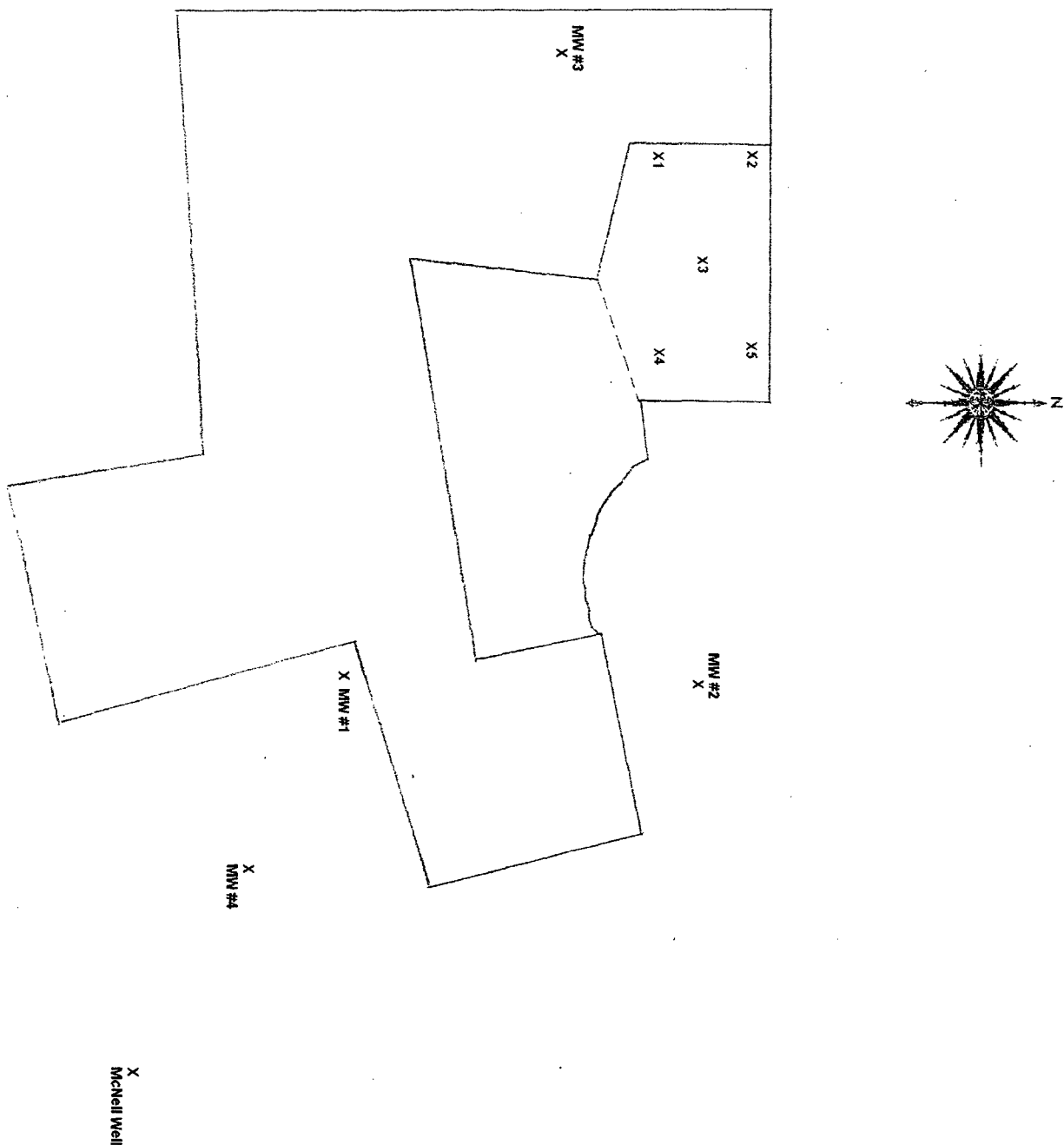
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Appendix B

Laboratory Analytical Results

10/1/03

Hobbs I-9 Sample Points Prior to Clay Liner Installation
Lab #H8053 #1 - #5



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2A



ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: KRISTIN FARRIS
122 W. TAYLOR
HOBBS, NM 88240
FAX TO:

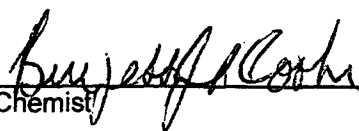
Receiving Date: 10/01/03
Reporting Date: 10/02/03
Project Number: HOBBS I-9
Project Name: HOBBS I-9
Project Location: NOT GIVEN

Sampling Date: 10/01/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	CI* (mg/Kg)
		10/01/03	10/01/03	10/02/03
H8053-1	H-I-9 SP #1 BTM	<10.0	<10.0	64
H8053-2	H-I-9 SP #2	<10.0	<10.0	64
H8053-3	H-I-9 SP #3	<10.0	<10.0	253
H8053-4	H-I-9 SP #4	<10.0	<10.0	448
H8053-5	H-I-9 SP #5	<10.0	<10.0	112
Quality Control		802	761	1050
True Value QC		800	800	1000
% Recovery		100	95.1	105
Relative Percent Difference		1.7	7.4	6.7

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI-B

*Analyses performed on 1:4 w.v aqueous extracts.


Chemist

10/2/03
Date

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H8053A.XLS

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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

RICE OPERATING COMPANY
122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE
AIR
LOT NO: 02-2230
EXP. DATE: 11-20-04
METER READING
ACCURACY: 100.1

SERIAL NO: 104412
100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM $\pm$ 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19S	R38E

SAMPLE	PID RESULT	SAMPLE	PID RESULT
Sample Point #1	1.3 PPM		
#2	1.0 PPM		
#3	2.5 PPM		
#4	2.3 PPM		
#5	.7 PPM		

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Loy R. Rascon
Signature

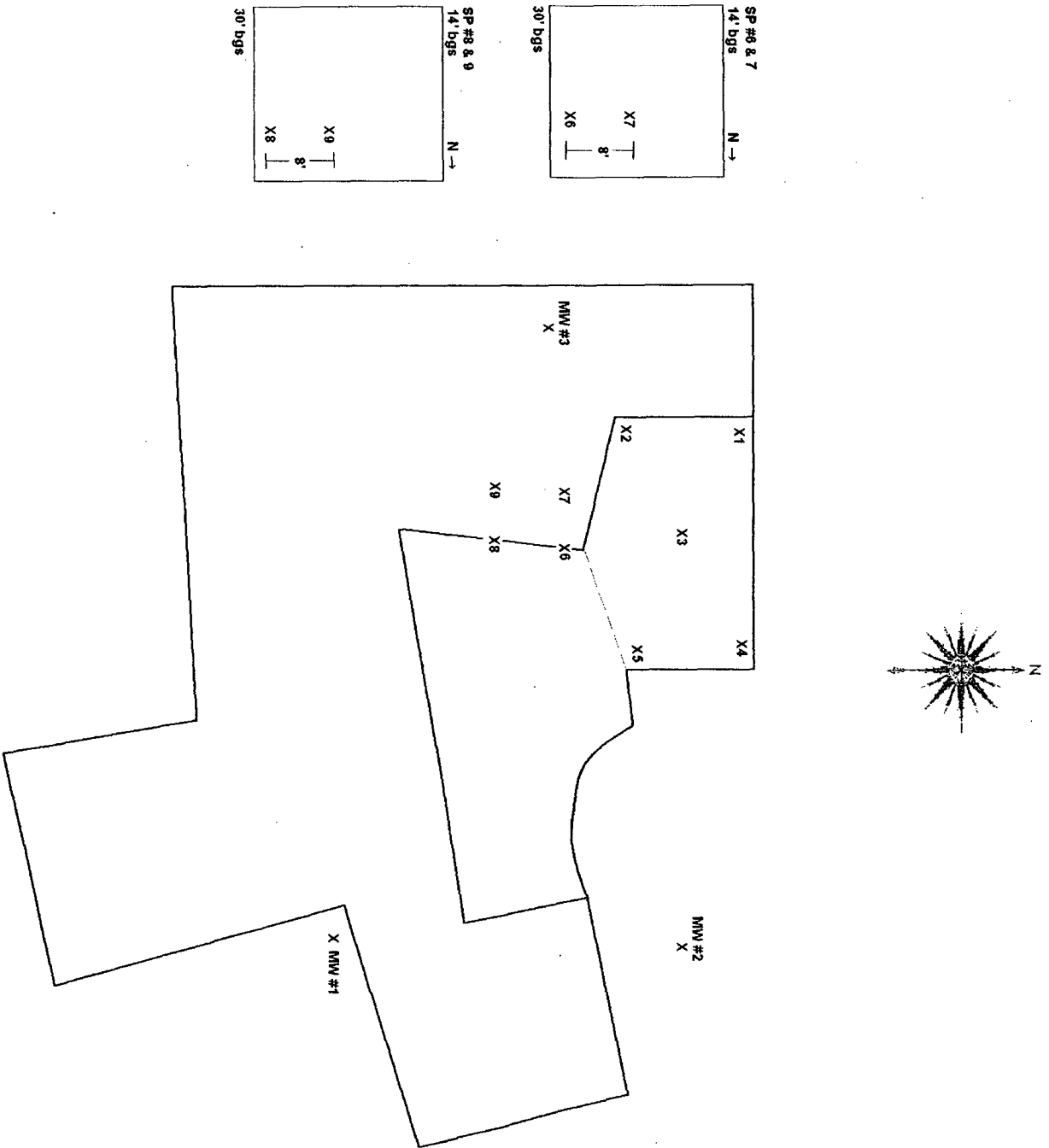
10-1-03
Date

COPY

10/6/03

Lab #G0307653

1st 5' lift after clay liner @ 30' bgs & sample points #6 - #8



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2AB

ANALYTICAL REPORT

Prepared for:

Kristin Farris
Rice Operating
122 W. Taylor
Hobbs, NM 88240

Project: Hobbs Jct. I-9

PO#:

Order#: G0307653

Report Date: 10/08/2003

Certificates

US EPA Laboratory Code TX00158

COPY

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

Rice Operating
122 W. Taylor
Hobbs, NM 88240
505-397-1471

Order#: G0307653
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0307653-01	1st 5' Lift #1	SOIL	10/3/03 11:30	10/6/03 8:00	Plastic Bag	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		
0307653-02	1st 5' Lift #2	SOIL	10/3/03 11:45	10/6/03 8:00	Plastic Bag	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		
0307653-03	1st 5' Lift #3	SOIL	10/3/03 12:00	10/6/03 8:00	Plastic Bag	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		
0307653-04	1st 5' Lift #4	SOIL	10/3/03 12:15	10/6/03 8:00	Plastic Bag	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		
0307653-05	1st 5' Lift #5	SOIL	10/3/03 12:30	10/6/03 8:00	Plastic Bag	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		
0307653-06	West Wall Btm #6	SOIL	10/3/03 13:00	10/6/03 8:00	Plastic Bag	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		
0307653-07	West Wall Btm #7	SOIL	10/3/03 13:10	10/6/03 8:00	Plastic Bag	ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 4.0 C		

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

Rice Operating
122 W. Taylor
Hobbs, NM 88240
505-397-1471

Order#: G0307653
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
	8015M Chloride					
0307653-08	West Wall 8' FB #8	SOIL	10/3/03 13:20	10/6/03 8:00	Plastic Bag	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		
0307653-09	West Wall 8' FB #9	SOIL	10/3/03 13:30	10/6/03 8:00	Plastic Bag	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		

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ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Kristin Farris
Rice Operating
122 W. Taylor
Hobbs, NM 88240

Order#: G0307653
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

Lab ID: 0307653-01
Sample ID: 1st 5' Lift #1

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		10/7/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	26.4	10.0
TOTAL, C6-C35	26.4	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	96%	70	130
1-Chlorooctadecane	101%	70	130

Lab ID: 0307653-02
Sample ID: 1st 5' Lift #2

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		10/7/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	94%	70	130
1-Chlorooctadecane	102%	70	130

COPY

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

Page 1 of 5

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Kristin Farris
Rice Operating
122 W. Taylor
Hobbs, NM 88240

Order#: G0307653
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

Lab ID: 0307653-03
Sample ID: 1st 5' Lift #3

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		10/7/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	102%	70	130
1-Chlorooctadecane	113%	70	130

Lab ID: 0307653-04
Sample ID: 1st 5' Lift #4

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		10/7/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	12.1	10.0
TOTAL, C6-C35	12.1	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	95%	70	130
1-Chlorooctadecane	99%	70	130

COF

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

Page 2 of 5

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Kristin Farris
Rice Operating
122 W. Taylor
Hobbs, NM 88240

Order#: G0307653
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

Lab ID: 0307653-05
Sample ID: 1st 5' Lift #5

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		10/7/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	18.9	10.0
TOTAL, C6-C35	18.9	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	85%	70	130
1-Chlorooctadecane	88%	70	130

Lab ID: 0307653-06
Sample ID: West Wall Btm #6

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		10/7/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	11.6	10.0
TOTAL, C6-C35	11.6	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	79%	70	130
1-Chlorooctadecane	81%	70	130

COF

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

Page 3 of 5

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Kristin Farris
Rice Operating
122 W. Taylor
Hobbs, NM 88240

Order#: G0307653
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

Lab ID: 0307653-07
Sample ID: West Wall Btm #7

8015M

Method	Date	Date	Sample	Dilution		
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		10/7/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	84%	70	130
1-Chlorooctadecane	88%	70	130

Lab ID: 0307653-08
Sample ID: West Wall 8' FB #8

8015M

Method	Date	Date	Sample	Dilution		
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		10/7/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	90%	70	130
1-Chlorooctadecane	96%	70	130

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Page 4 of 5

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Kristin Farris
Rice Operating
122 W. Taylor
Hobbs, NM 88240

Order#: G0307653
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

Lab ID: 0307653-09
Sample ID: West Wall 8' FB #9

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		10/7/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	71.4	10.0
DRO, >C12-C35	401	10.0
TOTAL, C6-C35	472	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	109%	70	130
1-Chlorooctadecane	123%	70	130

Approval:

Celey D. Keene
Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

Date

10/9/03

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Page 5 of 5

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Kristin Farris
Rice Operating
122 W. Taylor
Hobbs, NM 88240

Order#: G0307653
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

Lab ID: 0307653-01
Sample ID: 1st 5' Lift #1

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	35.4	mg/kg	1	20	9253	10/7/03	SB

Lab ID: 0307653-02
Sample ID: 1st 5' Lift #2

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	53.2	mg/kg	1	20	9253	10/7/03	SB

Lab ID: 0307653-03
Sample ID: 1st 5' Lift #3

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	35.4	mg/kg	1	20	9253	10/7/03	SB

Lab ID: 0307653-04
Sample ID: 1st 5' Lift #4

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	35.4	mg/kg	1	20	9253	10/7/03	SB

Lab ID: 0307653-05
Sample ID: 1st 5' Lift #5

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	35.4	mg/kg	1	20	9253	10/7/03	SB

Lab ID: 0307653-06
Sample ID: West Wall Btm #6

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	106	mg/kg	1	20	9253	10/7/03	SB

RL = Reporting Limit N/A = Not Applicable

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Page 1 of 2

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Kristin Farris
Rice Operating
122 W. Taylor
Hobbs, NM 88240

Order#: G0307653
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

Lab ID: 0307653-07
Sample ID: West Wall Btm #7

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	<20	mg/kg	1	20	9253	10/7/03	SB

Lab ID: 0307653-08
Sample ID: West Wall 8' FB #8

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	<20	mg/kg	1	20	9253	10/7/03	SB

Lab ID: 0307653-09
Sample ID: West Wall 8' FB #9

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	1770	mg/kg	1	20	9253	10/7/03	SB

Approval:

Cele D. Keene 10/9/03
Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

Date

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ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0307653

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0007064-01			<20		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0307648-01	1030	500	1540	102.0%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0307648-01	1030	500	1560	106.0%	1.3%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0007064-04		5000	4960	99.2%	

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ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0307653

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0007072-02			<10.0		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0307653-01	26.4	952	1046	107.1%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0307653-01	26.4	952	1027	105.1%	1.8%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0007072-05		1000	1008	100.8%	

COPY

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

Project Manager: Kristin Farris

Company Name RICE Operating Co.

Company Address: 122 W. Taylor

City/State/Zip: Hobbs, NM 88240

Telephone No. (505) 393-9174

Fax No: (505) 397-1471

Sample Signature: *Quintin L. Jones / Kay R. Lacombe*

1571 1278

[illegible]

Special Instructions:

Relinquished by:

Date _____

Received by:

Time

Date	Time
------	------

Relinquished by:

Date _____

Rechnungswesen

Time

Date	Time
11/11/11	11:11

Sample Containers Intact?
Temperature Upon Receipt
Laboratory Comments:

XYE

Plastic bag
44 oz glass

RICE OPERATING COMPANY
 122 WEST TAYLOR
 HOBBS, NEW MEXICO 88240
 PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
 MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
 CALIBRATION GAS
 GAS COMPOSITION: ISOBUTYLENE
 AIR
 LOT NO: 02-2230
 EXP. DATE: 11-20-04
 METER READING
 ACCURACY: 101.1

SERIAL NO: 104412
 100 PPM
 BALANCE
 FILL DATE: 5-20-03
 ACCURACY: 100 ppm ± 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	PI ^{RAE} I	9	19	38

1st 5' Lgt 5 1/2 BTM @ APPROX 29' AFTER CLAY LINER

SAMPLE	PID RESULT	SAMPLE	PID RESULT
1	1.3		
2	2.0		
3	0.7		
4	1.5		
5	1.7		
West Wall Bottom & 8' Above From Bottom			
6	18.1	7	1.6
8	6.6	9	96.0

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Ray R. Gibson
 Signature

Environ. Project Leader
 Title

10-6-03
 Date

COPY

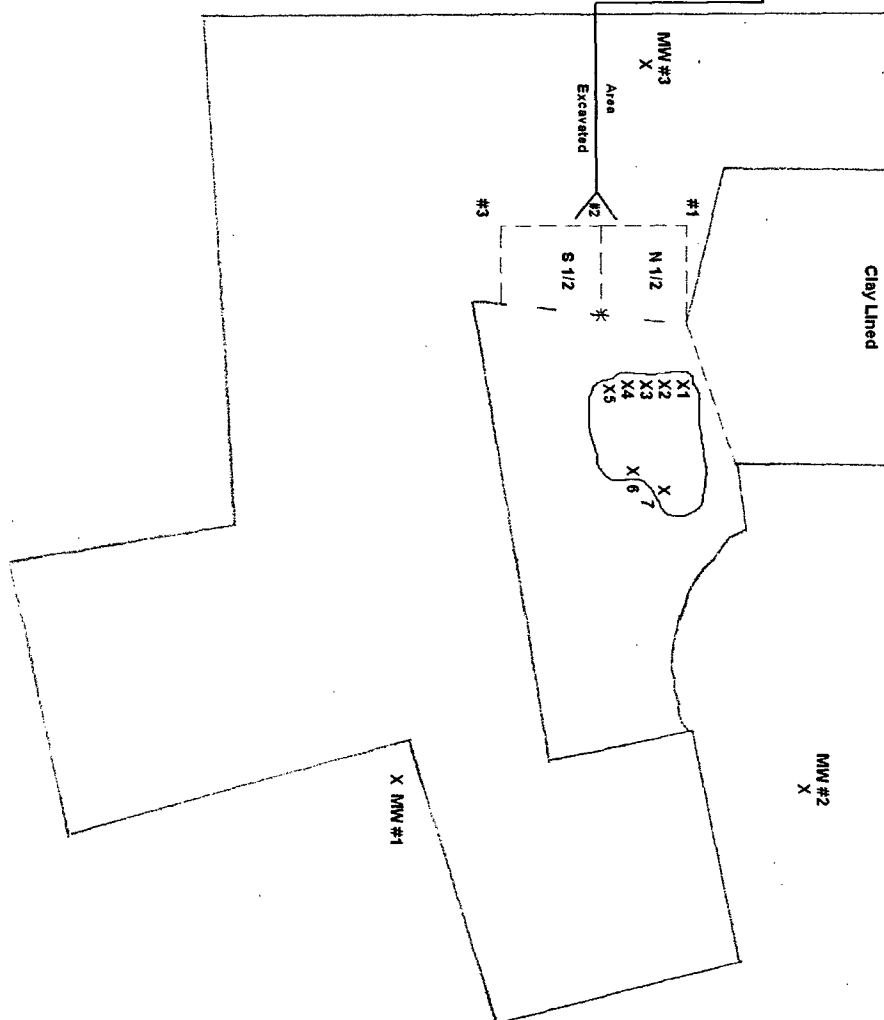
10/21/03
 Lab #H8102 #1 - #3
 7-Point Sample Loc. @ 36' @ Groundwater & West Wall Comp
 Sample Points



Side View of West Wall N. 1/2 & S. 1/2
 Sample Points

14' bgs		N →	
S 1/2	X1	X2	N 1/2
	X3		X2
X4	X5	X4	X5

Approx 32' bgs



MM #2
 X

X MM #1

RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2B



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO:

Receiving Date: 10/21/03
Reporting Date: 10/22/03
Project Number: NOT GIVEN
Project Name: HOBBS JCT I-9
Project Location: HOBBS SYSTEM

Sampling Date: 10/20/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		10/21/03	10/21/03	10/21/03	10/21/03
H8102-1	7 PT GW @ 36' COMP.	<0.005	<0.005	<0.005	<0.015
H8102-2	WWS 1/2 5 PT COMP	<0.005	<0.005	<0.005	<0.015
H8102-3	WWN 1/2 5 PT COMP	<0.005	<0.005	<0.005	<0.015
Quality Control		0.107	0.099	0.094	0.276
True Value QC		0.100	0.100	0.100	0.300
% Recovery		107	99.3	93.9	92.2
Relative Percent Difference		6.1	0.6	6.6	8.5

METHOD: EPA SW-846 8260

Bryan J. Cooke
Chemist

10/22/03
Date

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H8102B.XLS

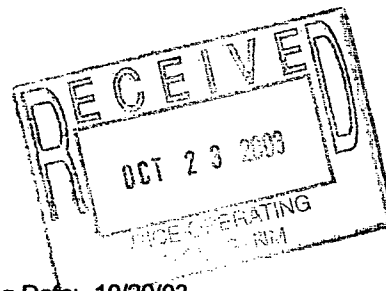
COPY



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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO:



Receiving Date: 10/21/03
Reporting Date: 10/22/03
Project Number: NOT GIVEN
Project Name: HOBBS JCT I-9
Project Location: HOBBS SYSTEM

Sampling Date: 10/20/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl ⁻ (mg/Kg)
		10/21/03	10/21/03	10/21/03
H8102-1	7 PT GW @ 36' COMP.	<10.0	28.8	80
H8102-2	WWS 1/2 5 PT COMP	<10.0	16.7	96
H8102-3	WWN 1/2 5 PT COMP	<10.0	<10.0	64
Quality Control		761	816	960
True Value QC		800	800	1000
% Recovery		95.1	102	96.0
Relative Percent Difference		1.9	3.6	8.3

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl⁻: Std. Methods 4500-Cl⁻B

*Analyses performed on 1:4 w:v aqueous extracts.

Chemist

10/22/03
Date

H8102A.XLS

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(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page _____ of _____

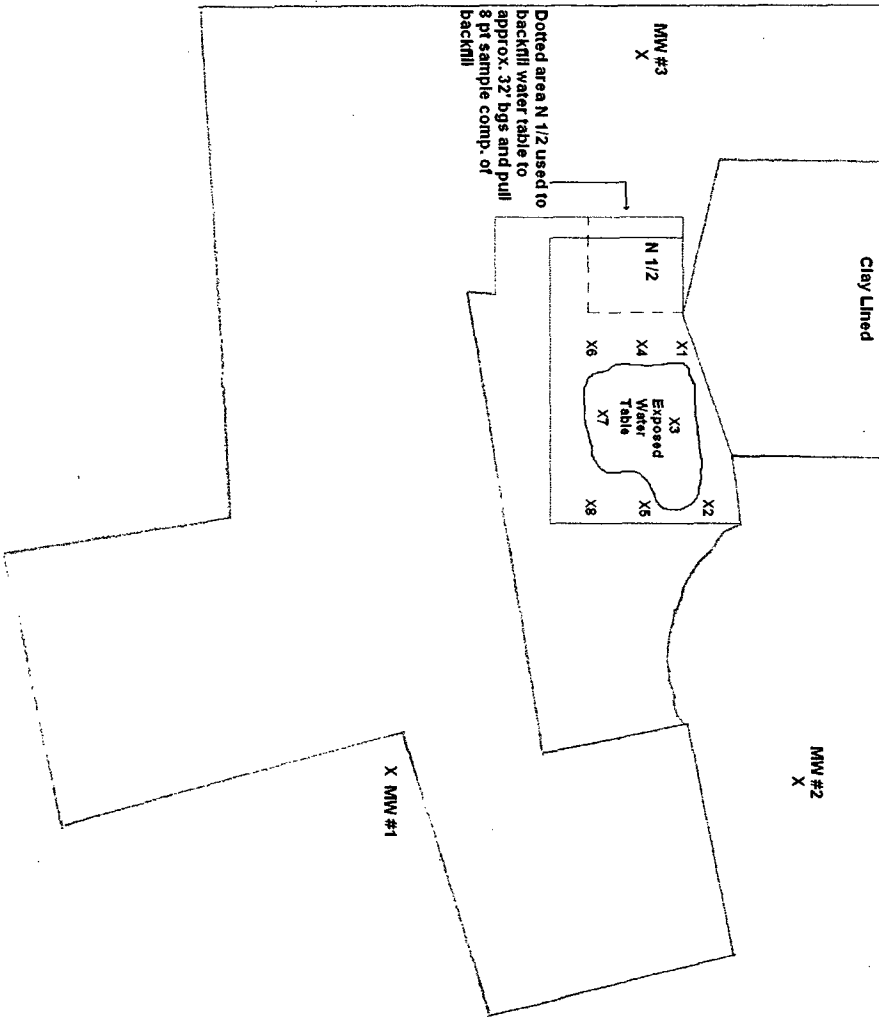
CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

COPY

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

10/24/03 Wate Table Backfill from West Wall
 Lab # H8113
 8 pt comp. west wall after backfill



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

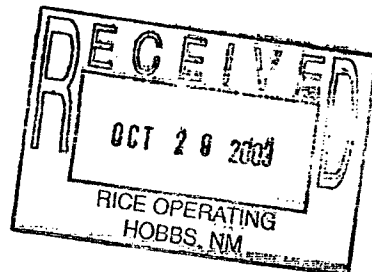
Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2C



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO:



Receiving Date: 10/24/03
Reporting Date: 10/27/03
Project Number: NOT GIVEN
Project Name: HOBBS JCT. I-9
Project Location: NOT GIVEN

Sampling Date: 10/24/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
------------	-----------	--	--	----------------

ANALYSIS DATE	10/27/03	10/27/03	10/27/03
H8113-1 HOBBS I-9 WATER TABLE BACKFILL	<10.0	<10.0	160
Quality Control	754	793	1020
True Value QC	800	800	1000
% Recovery	94.2	99.2	102
Relative Percent Difference	2.8	10.0	5.9

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

*Analyses performed on 1:4 w:v aqueous extracts.

Bryan R. Cashe
Chemist

10/27/03
Date

COPY

H8113.XLS

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ARDINAL LABORATORIES, INC.

22111 Beechwood, Abilene, TX 79603 101 East Mariand, Hobbs, NM 88240
(816) 673-7001 Fax (816) 673-7020 (605) 393-2326 Fax (605) 393-2476

Page _____ of _____

[illegible]

* Card/n2/ cannot accept verbal changes. Please fax written changes to (915) 673-7020.

122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

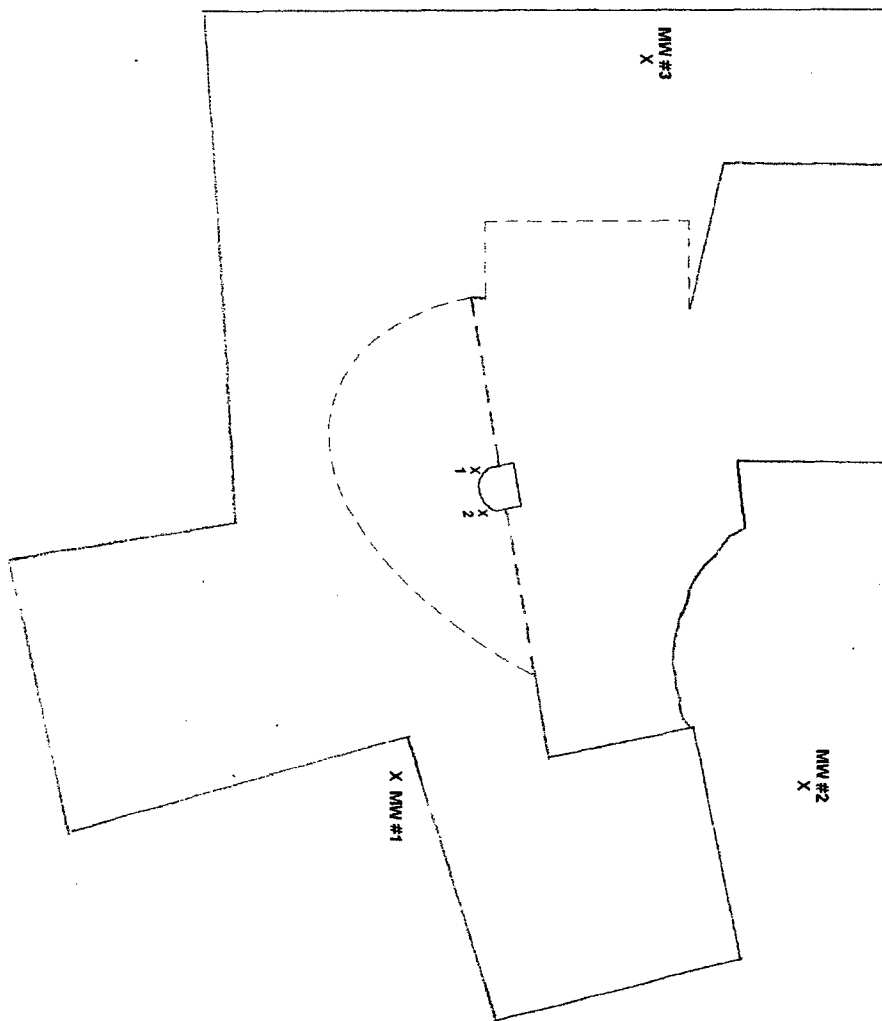
100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM $\pm$ 2%

[illegible]

10-24-03
Date

COPY

10/30/03
 Lab #H8129
 Hobbs I-9 Sample point of last water table
 area open @ 36' sampled between
 sandstone (rock) & water level 2 pt comp



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

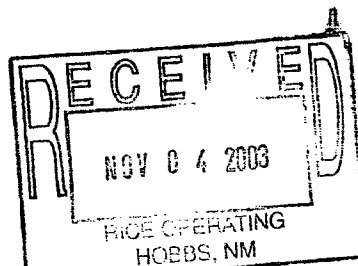
Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2D



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471



Receiving Date: 10/30/03
Reporting Date: 10/31/03
Project Number: NOT GIVEN
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 10/29/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/HM

LAB NUMBER SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
	10/30/03	10/30/03	10/31/03
H8129-1 HOBBS I-9 S. @ WATER	<10.0	<10.0	48
TABLE 36'			
Quality Control	754	793	1020
True Value QC	800	800	1000
% Recovery	94.2	99.2	102
Relative Percent Difference	2.8	10.0	5.9

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

*Analyses performed on 1:4 w:v aqueous extracts.

Burjess J. Koster
Chemist

10/31/03
Date

H8129.XLS

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RICE OPERATING COMPANY
122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE
AIR
LOT NO: 02-2230
EXP. DATE: 11-20-04
METER READING
ACCURACY: 99.8

SERIAL NO: 104412
100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM $\pm$ 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19S	R38E

SAMPLE	PID RESULT	SAMPLE	PID RESULT
SP#1	6.1		
SP#2	6.8		

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Ray R. Rossen
Signature

Environ. Project Leader
Title

10-30-03
Date

COPY

10/31/03

Lab #H8133 #1 - #2

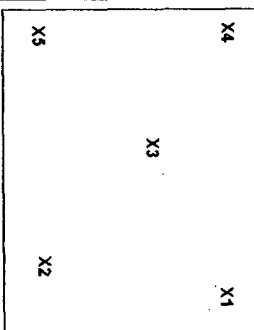
S. wall comp E. end

S. wall comp W. end

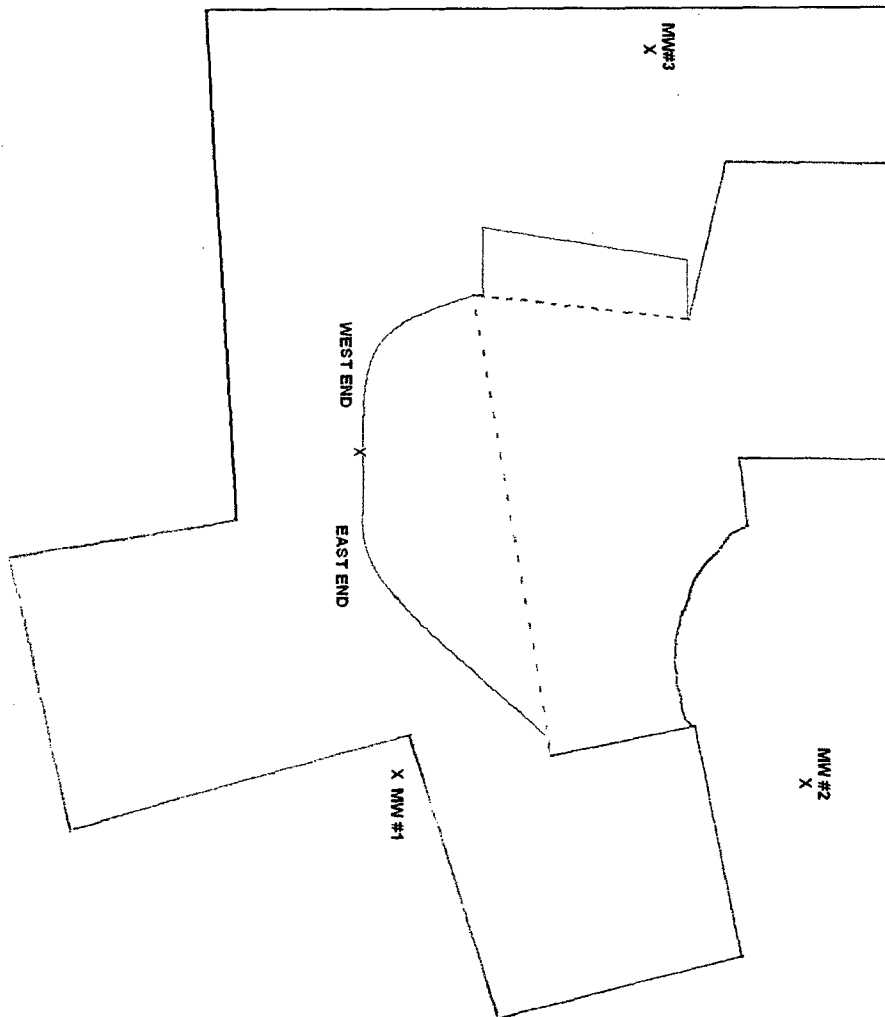
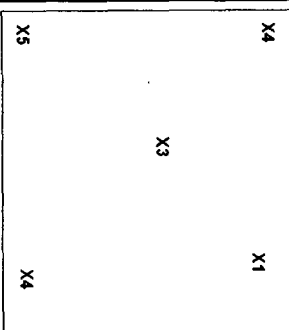


SOUTH WALL SIDE VIEW
WEST END

APPROX. 14' BGS
W →



APPROX. 32' BGS
SOUTH WALL SIDE VIEW EAST END
APPROX. 14' BGS
W →



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

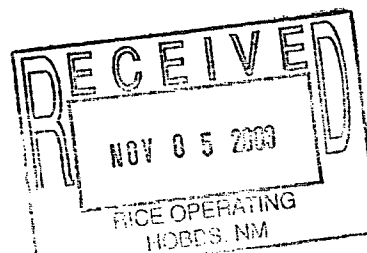
Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2F



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 393-9174



Receiving Date: 10/31/03
Reporting Date: 11/04/03
Project Owner: RICE
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 10/30/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/HM

LAB NUMBER SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (C ₁₀ -C ₂₈) (mg/Kg)	CI* (mg/Kg)
	10/31/03	10/31/03	10/31/03
H8133-1 S. WALL COMP. EAST END	<10.0	<10.0	32
H8133-2 S. WALL COMP. WEST END	<10.0	<10.0	16
Quality Control	779	818	950
True Value QC	800	800	1000
% Recovery	97.4	102	95.0
Relative Percent Difference	1.5	1.1	6.9

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI/B

*Analysis performed on a 1:4 w.v aqueous extract.

Bryce A. Cook
Chemist

11/04/03
Date

COPY

H8133.XLS

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(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

22111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

[illegible]

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Phone Result
Fax Result
REMARKS:

Y
R
O
O

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RICE OPERATING COMPANY
122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE
AIR
LOT NO: 02-2230
EXP. DATE: 11-20-04
METER READING
ACCURACY: 100.1

SERIAL NO: 104412
100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM + - 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I 9	I	9	195	38E

SAMPLE	PID RESULT	SAMPLE	PID RESULT
S. WALL RAMP	139		
N. WALL @ 32' BGS	279		
E. WATER HOLE @ 36'	9.9		
S. WALL W. End	2.6		
S. WALL E. End	2.5		

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

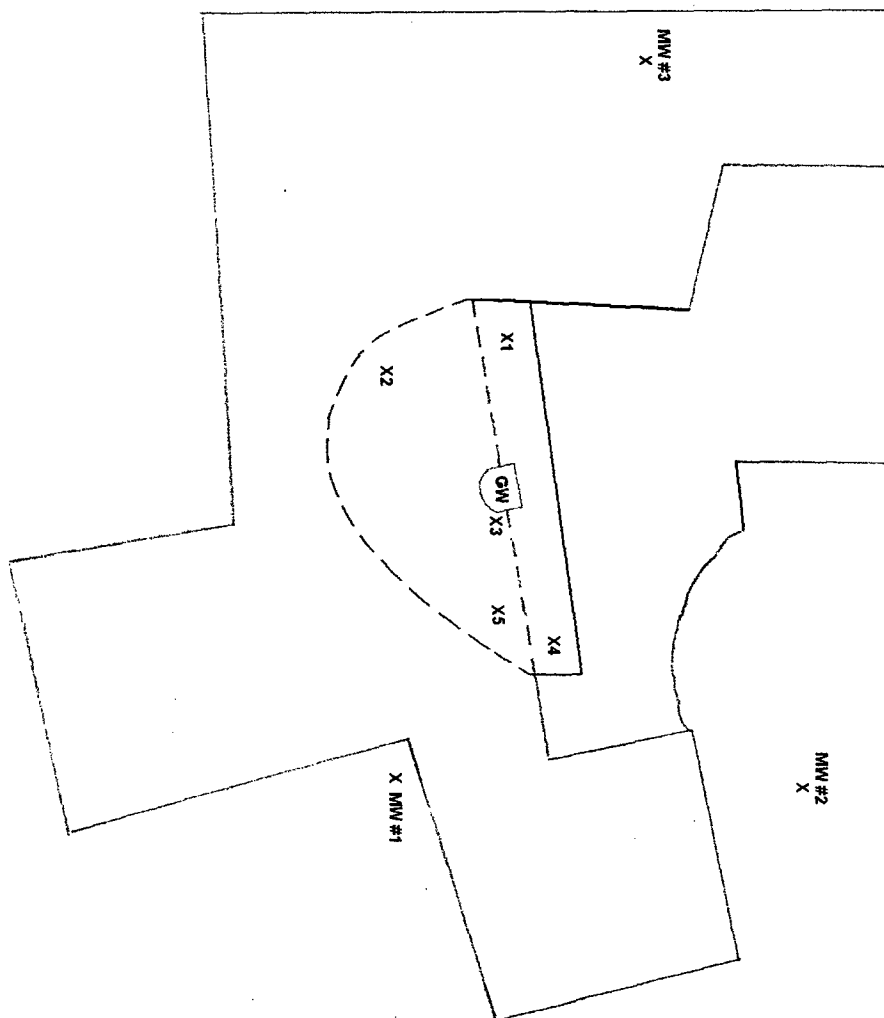
Ray R. Rosson
Signature

Environ. Project Leader
Title

10-31-03
Date

COPY

11/6/03
 Lab # H8148
 Groundwater backfill south end 5 pt comp



RICE OPERATING COMPANY

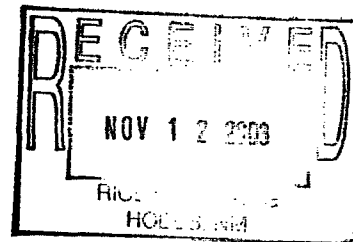
122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2E



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240



ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

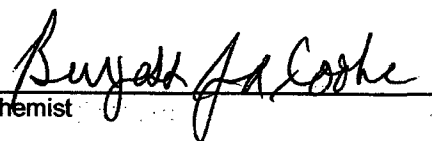
Receiving Date: 11/06/03
Reporting Date: 11/07/03
Project Number: NOT GIVEN
Project Name: HOBBS JCT I-9
Project Location: HOBBS SYSTEM

Sampling Date: 11/05/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
	11/05/03	11/05/03	11/06/03
H8148-1 WATER TABLE BACKFILL	<10.0	<10.0	96
S. END			
Quality Control	783	807	950
True Value QC	800	800	1000
% Recovery	97.8	101	95.0
Relative Percent Difference	2.0	5.1	6.9

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl*: Std. Methods 4500-Cl*B

*Analyses performed on 1:4 w:v aqueous extracts.


Chemist

11/7/03
Date

COPY

H8148.XLS

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ARDINAL LABORATORIES, INC.

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Y
R
O
C

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RICE OPERATING COMPANY
122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE
AIR
LOT NO: 02-2230
EXP. DATE: 11-20-04
METER READING
ACCURACY: 100.1

SERIAL NO: 104412
100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM + - 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I 9	I	9	195	38E

SAMPLE	PID RESULT	SAMPLE	PID RESULT
S. WALL RAMP	139		
N. WALL @ 32' BGS	279		
E. WATER HOLE @ 36'	9.9		
S. WALL W. End	2.6		
S. WALL E. End	2.5		

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

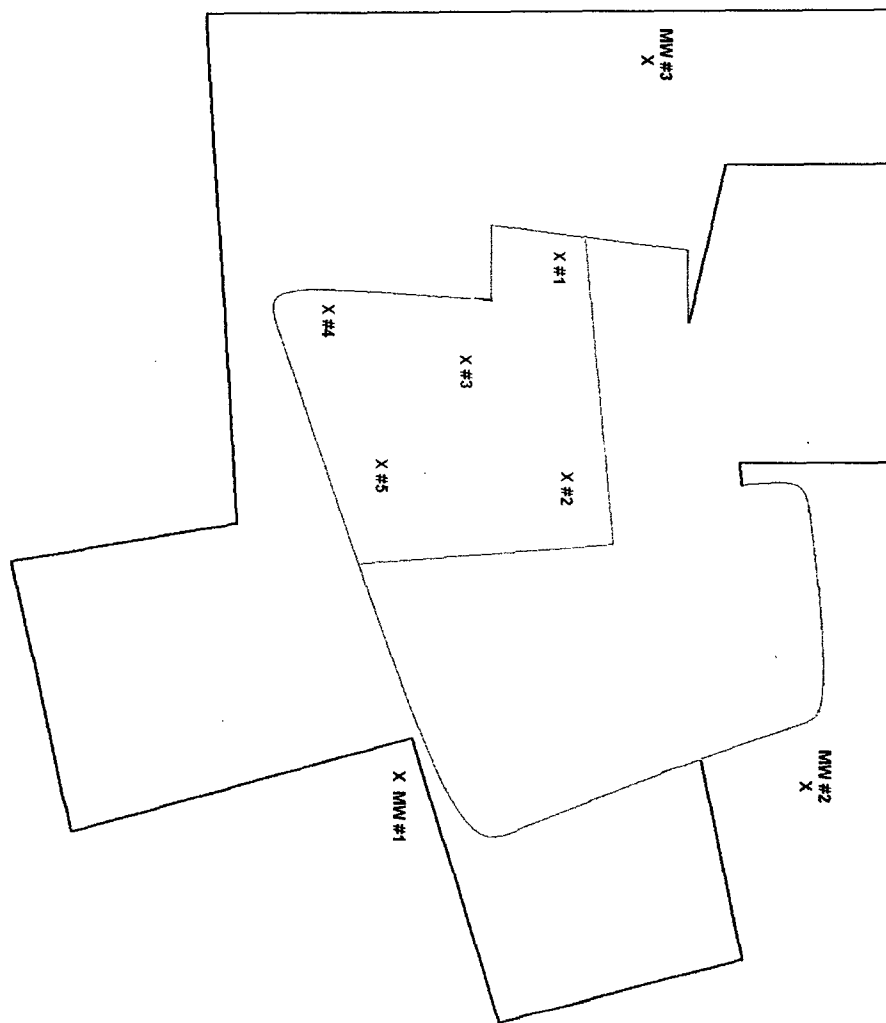
Ray P. Rascon
Signature

Environ. Project Leader
Title

10-31-03
Date

COPY

12/9/03
 Lab #H8236
 2nd 5' lift 3rd clay liner 5 pt comp



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

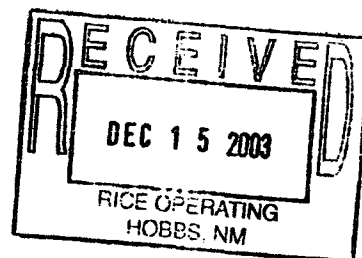
Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2K



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471



Receiving Date: 12/09/03
Reporting Date: 12/10/03
Project Owner: RICE
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 12/05/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
		12/09/03	12/09/03	12/09/03
H8236-1	2nd LIFT 3rd CLAY LINER	<10.0	<10.0	176
Quality Control		795	833	940
True Value QC		800	800	1000
% Recovery		99.4	104	94.0
Relative Percent Difference		10.7	9.5	7.4

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

*Analysis performed on a 1:4 w:v aqueous extract.

Burgett for Cooke
Chemist

12/10/03
Date

COPY

H8236.XLS

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Page _____ of _____

BILL TO										ANALYSIS REQUEST									
Company Name: RICE OPER CO																			
Project Manager: ROY R. RASCOON																			
Address: 122 W TAYLOR																			
City: Hobbs																			
State: NM Zip: 88240																			
Phone #: 393-9174 Fax #:																			
Project #: Hobbs JCT I-9 Project Owner: RICE																			
Project Name:																			
Project Location:																			
Sampler Name: ROY R. RASCOON																			
FOR LAB USE ONLY																			
Lab I.D.										Sample I.D.									
48236-1 and 48237-1 and 48238-1 and 48239-1 and 48240-1 and 48241-1 and 48242-1 and 48243-1 and 48244-1 and 48245-1 and 48246-1 and 48247-1 and 48248-1 and 48249-1 and 48250-1 and 48251-1 and 48252-1 and 48253-1 and 48254-1 and 48255-1 and 48256-1 and 48257-1 and 48258-1 and 48259-1 and 48260-1 and 48261-1 and 48262-1 and 48263-1 and 48264-1 and 48265-1 and 48266-1 and 48267-1 and 48268-1 and 48269-1 and 48270-1 and 48271-1 and 48272-1 and 48273-1 and 48274-1 and 48275-1 and 48276-1 and 48277-1 and 48278-1 and 48279-1 and 48280-1 and 48281-1 and 48282-1 and 48283-1 and 48284-1 and 48285-1 and 48286-1 and 48287-1 and 48288-1 and 48289-1 and 48290-1 and 48291-1 and 48292-1 and 48293-1 and 48294-1 and 48295-1 and 48296-1 and 48297-1 and 48298-1 and 48299-1 and 48300-1 and 48301-1 and 48302-1 and 48303-1 and 48304-1 and 48305-1 and 48306-1 and 48307-1 and 48308-1 and 48309-1 and 48310-1 and 48311-1 and 48312-1 and 48313-1 and 48314-1 and 48315-1 and 48316-1 and 48317-1 and 48318-1 and 48319-1 and 48320-1 and 48321-1 and 48322-1 and 48323-1 and 48324-1 and 48325-1 and 48326-1 and 48327-1 and 48328-1 and 48329-1 and 48330-1 and 48331-1 and 48332-1 and 48333-1 and 48334-1 and 48335-1 and 48336-1 and 48337-1 and 48338-1 and 48339-1 and 48340-1 and 48341-1 and 48342-1 and 48343-1 and 48344-1 and 48345-1 and 48346-1 and 48347-1 and 48348-1 and 48349-1 and 48350-1 and 48351-1 and 48352-1 and 48353-1 and 48354-1 and 48355-1 and 48356-1 and 48357-1 and 48358-1 and 48359-1 and 48360-1 and 48361-1 and 48362-1 and 48363-1 and 48364-1 and 48365-1 and 48366-1 and 48367-1 and 48368-1 and 48369-1 and 48370-1 and 48371-1 and 48372-1 and 48373-1 and 48374-1 and 48375-1 and 48376-1 and 48377-1 and 48378-1 and 48379-1 and 48380-1 and 48381-1 and 48382-1 and 48383-1 and 48384-1 and 48385-1 and 48386-1 and 48387-1 and 48388-1 and 48389-1 and 48390-1 and 48391-1 and 48392-1 and 48393-1 and 48394-1 and 48395-1 and 48396-1 and 48397-1 and 48398-1 and 48399-1 and 48400-1 and 48401-1 and 48402-1 and 48403-1 and 48404-1 and 48405-1 and 48406-1 and 48407-1 and 48408-1 and 48409-1 and 48410-1 and 48411-1 and 48412-1 and 48413-1 and 48414-1 and 48415-1 and 48416-1 and 48417-1 and 48418-1 and 48419-1 and 48420-1 and 48421-1 and 48422-1 and 48423-1 and 48424-1 and 48425-1 and 48426-1 and 48427-1 and 48428-1 and 48429-1 and 48430-1 and 48431-1 and 48432-1 and 48433-1 and 48434-1 and 48435-1 and 48436-1 and 48437-1 and 48438-1 and 48439-1 and 48440-1 and 48441-1 and 48442-1 and 48443-1 and 48444-1 and 48445-1 and 48446-1 and 48447-1 and 48448-1 and 48449-1 and 48450-1 and 48451-1 and 48452-1 and 48453-1 and 48454-1 and 48455-1 and 48456-1 and 48457-1 and 48458-1 and 48459-1 and 48460-1 and 48461-1 and 48462-1 and 48463-1 and 48464-1 and 48465-1 and 48466-1 and 48467-1 and 48468-1 and 48469-1 and 48470-1 and 48471-1 and 48472-1 and 48473-1 and 48474-1 and 48475-1 and 48476-1 and 48477-1 and 48478-1 and 48479-1 and 48480-1 and 48481-1 and 48482-1 and 48483-1 and 48484-1 and 48485-1 and 48486-1 and 48487-1 and 48488-1 and 48489-1 and 48490-1 and 48491-1 and 48492-1 and 48493-1 and 48494-1 and 48495-1 and 48496-1 and 48497-1 and 48498-1 and 48499-1 and 48500-1 and 48501-1 and 48502-1 and 48503-1 and 48504-1 and 48505-1 and 48506-1 and 48507-1 and 48508-1 and 48509-1 and 48510-1 and 48511-1 and 48512-1 and 48513-1 and 48514-1 and 48515-1 and 48516-1 and 48517-1 and 48518-1 and 48519-1 and 48520-1 and 48521-1 and 48522-1 and 48523-1 and 48524-1 and 48525-1 and 48526-1 and 48527-1 and 48528-1 and 48529-1 and 48530-1 and 48531-1 and 48532-1 and 48533-1 and 48534-1 and 48535-1 and 48536-1 and 48537-1 and 48538-1 and 48539-1 and 48540-1 and 48541-1 and 48542-1 and 48543-1 and 48544-1 and 48545-1 and 48546-1 and 48547-1 and 48548-1 and 48549-1 and 48550-1 and 48551-1 and 48552-1 and 48553-1 and 48554-1 and 48555-1 and 48556-1 and 48557-1 and 48558-1 and 48559-1 and 48560-1 and 48561-1 and 48562-1 and 48563-1 and 48564-1 and 48565-1 and 48566-1 and 48567-1 and 48568-1 and 48569-1 and 48570-1 and 48571-1 and 48572-1 and 48573-1 and 48574-1 and 48575-1 and 48576-1 and 48577-1 and 48578-1 and 48579-1 and 48580-1 and 48581-1 and 48582-1 and 48583-1 and 48584-1 and 48585-1 and 48586-1 and 48587-1 and 48588-1 and 48589-1 and 48590-1 and 48591-1 and 48592-1 and 48593-1 and 48594-1 and 48595-1 and 48596-1 and 48597-1 and 48598-1 and 48599-1 and 48600-1 and 48601-1 and 48602-1 and 48603-1 and 48604-1 and 48605-1 and 48606-1 and 48607-1 and 48608-1 and 48609-1 and 48610-1 and 48611-1 and 48612-1 and 48613-1 and 48614-1 and 48615-1 and 48616-1 and 48617-1 and 48618-1 and 48619-1 and 48620-1 and 48621-1 and 48622-1 and 48623-1 and 48624-1 and 48625-1 and 48626-1 and 48627-1 and 48628-1 and 48629-1																			

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

RICE OPERATING COMPANY
122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE
AIR
LOT NO: 02-2230
EXP. DATE: 11-20-04
METER READING
ACCURACY: 100.2

SERIAL NO: 104412
100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM ± 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

2nd 5' Lift 3rd Clay Liner

SAMPLE	PID RESULT	SAMPLE	PID RESULT
#1	3.2		
#2	3.6		
#3	4.3		
#4	2.6		
#5	3.6		
Comp 1-5	2.1		

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Ray R. Larson
Signature

Environ Project Leader
Title

12-9-03
Date

COPY

11/20/03

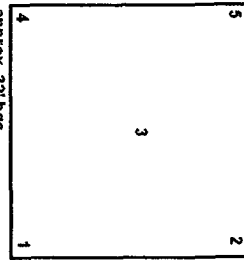
Lab # 0308006-1 & 0308006-2

N Wall E. 1/2 comp

N Wall W. 1/2 comp

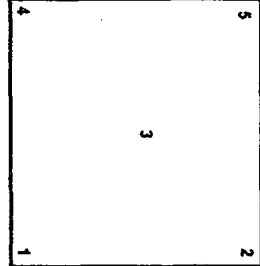
W ← N

14' bgs N. Wall W. 1/2

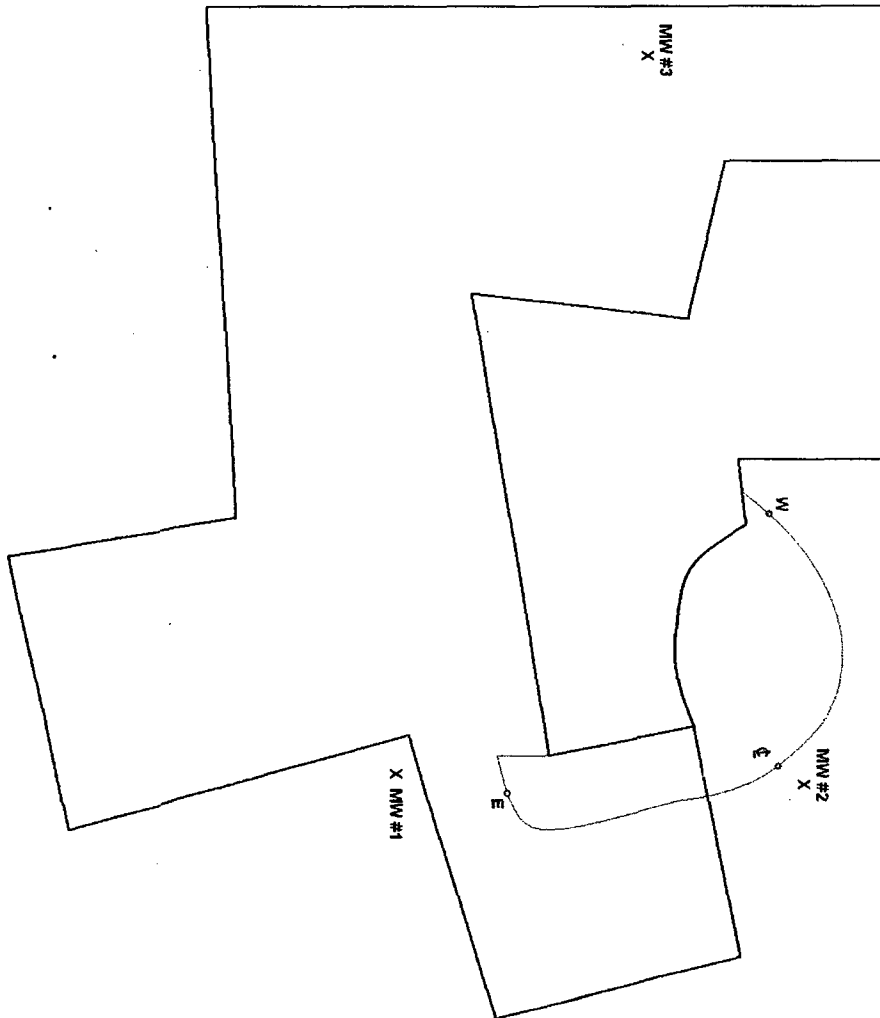


approx. 32' bgs

14' bgs N. Wall E. 1/2



approx. 32' bgs



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2AA

ANALYTICAL REPORT

Prepared for:

Roy Rascon
Rice Operating
122 West Taylor
Hobbs, NM 88240

Project: Hobbs Jct. I-9

PO#:

Order#: G0308006

Report Date: 11/26/2003

Certificates

US EPA Laboratory Code TX00158

COPY

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

Rice Operating
122 West Taylor
Hobbs, NM 88240
505-397-1471

Order#: G0308006
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0308006-01	N Wall E. 1/2 Comp.	SOIL	11/20/03 14:25	11/20/03 20:30	4 oz glass	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		
0308006-02	N Wall W. 1/2 Comp.	SOIL	11/20/03 14:10	11/20/03 20:30	4 oz glass	ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4.0 C		

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ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Roy Rascon
Rice Operating
122 West Taylor
Hobbs, NM 88240

Order#: G0308006
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

Lab ID: 0308006-01
Sample ID: N Wall E. 1/2 Comp.

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		11/21/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	94%	70	130
1-Chlorooctadecane	84%	70	130

Lab ID: 0308006-02
Sample ID: N Wall W. 1/2 Comp.

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		11/21/03	1	1	JLH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	91%	70	130
1-Chlorooctadecane	84%	70	130

Approval: *Raland K. Tuttle* 11-26-03
Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

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DL = Diluted out N/A = Not Applicable RL = Reporting Limit

Page 1 of 1

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Roy Rascon
Rice Operating
122 West Taylor
Hobbs, NM 88240

Order#: G0308006
Project:
Project Name: Hobbs Jct. I-9
Location: None Given

Lab ID: 0308006-01
Sample ID: N Wall E. 1/2 Comp.

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	<20.0	mg/kg	1	20	9253	11/23/03	SB

Lab ID: 0308006-02
Sample ID: N Wall W. 1/2 Comp.

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	21.3	mg/kg	1	20	9253	11/23/03	SB

Approval:

Roland K. Tuttle
Roland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

11-2603
Date

COPY

RL = Reporting Limit N/A = Not Applicable

Page 1 of 1

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0308006

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0007537-02			<10		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0308006-01	0	952	845	88.8%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0308006-01	0	952	865	90.9%	2.3%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0007537-05		1000	928	92.8%	

COPY

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0308006

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0007529-01			<12.0		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0307976-21	1180	500	1620	88.%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0307976-21	1180	500	1630	90.%	0.6%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0007529-04		5000	5000	100.%	

COPY

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

Fax: 915-563-1713

Project Manager:

Ray R. Rascon

Company Name

RICE OPER. CO.

Company Address:

122 W. Taylor

City/State/Zip:

Hobbs, N.M. 88240

Telephone No: 505-393-9174

Fax No: 505-397-1471

Sampler Signature: _____

Reyn R. Ratscon

[illegible]

RICE OPERATING COMPANY
 122 WEST TAYLOR
 HOBBS, NEW MEXICO 88240
 PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
 MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S

SERIAL NO: 104412

CALIBRATION GAS

GAS COMPOSITION: ISOBUTYLENE

100 PPM

AIR

BALANCE

LOT NO: 02-2230

FILL DATE: 5-20-03

EXP. DATE: 11-20-04

ACCURACY: 100 PPM $\pm$ 2%

METER READING

ACCURACY: 100.5

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

SAMPLE	PID RESULT	SAMPLE	PID RESULT
1	1.1	1	0.9
2	1.6	2	1.2
3	1.1	3	1.2
4	2.1	4	1.7
5	1.6	5	1.3
N. Wall W.		N. Wall E. 1/2	
1/2 5 PT		5 PT Comp.	
Comp			

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

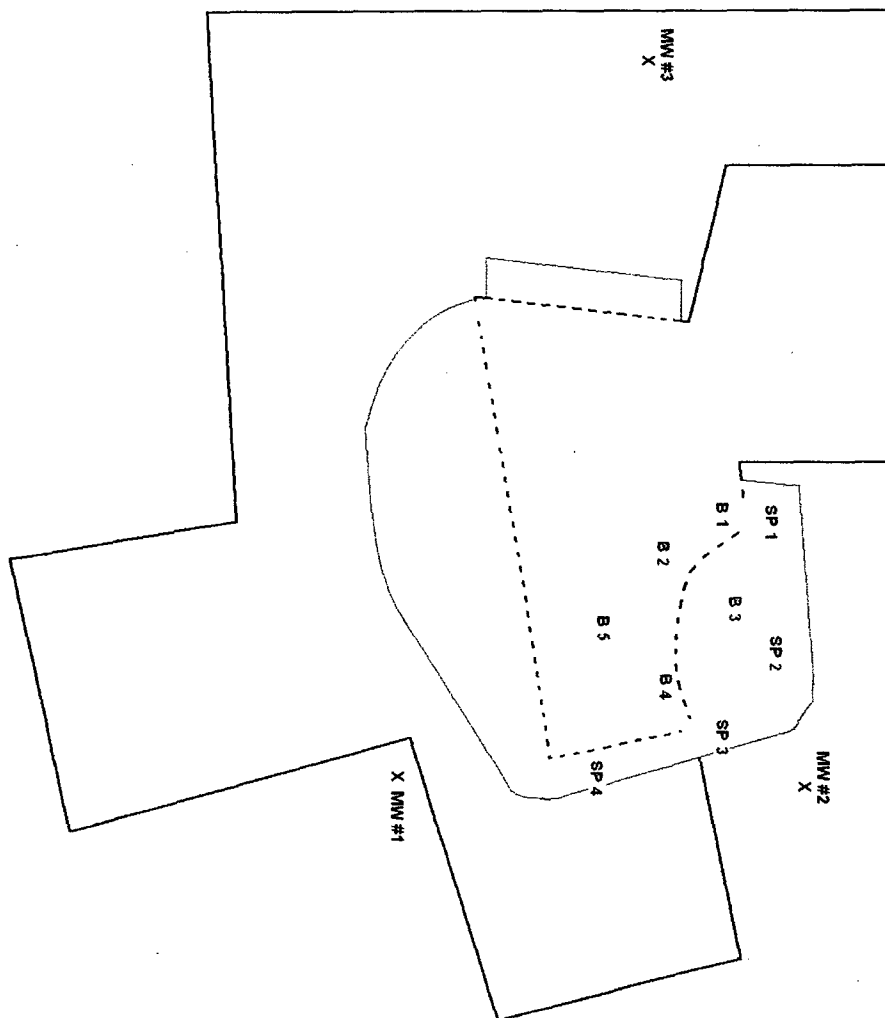
Ray R. Larson
 Signature

Environ. Project Leader
 Title

11-20-03
 Date

COPY

11/21/03
 Lab #HH8202 #1 - #2
 Base sample points @ approx 32' and
 4 pt comp @ GW 36'



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

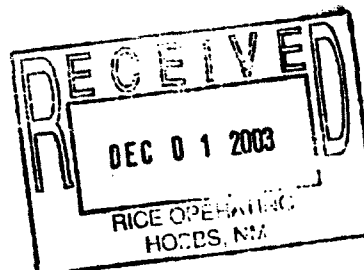
Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 26



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471



Receiving Date: 11/21/03
Reporting Date: 11/24/03
Project Number: NOT GIVEN
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 11/21/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC/AH

LAB NO. SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
	11/21/03	11/21/03	11/24/03
H8202-1 4 PT COMP. @ WATER TABLE 36'	<10.0	<10.0	112
H8202-2 5 PT BASE COMP. @ 30'	<10.0	<10.0	144
Quality Control	777	837	1000
True Value QC	800	800	1000
% Recovery	97.2	105	100
Relative Percent Difference	7.3	6.1	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

*Analyses performed on 1:4 w:v aqueous extracts.

Burjess R. Coker
Chemist

11/24/03
Date

COPY

H8202.XLS

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

SERIAL NO: 104412

100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM $\pm$ 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I 9	I	9	19S	38E

[illegible]

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

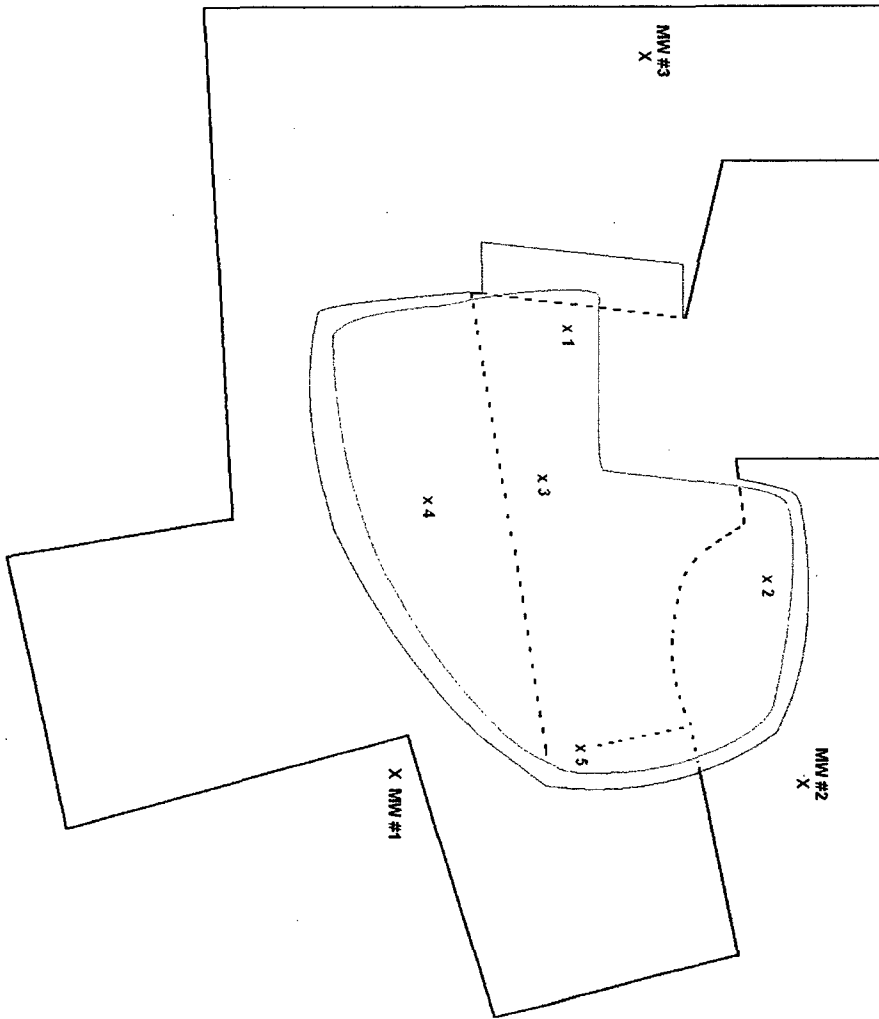
Ray R. Pascoe
Signature

Environ. Project Leader
Title

21
11-26-03
Date

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12/2/03
 Lab #H8214
 1st 5' backfill lift after 3rd clay
 liner sample points 1 - 5



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2H



PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 12/02/03
Reporting Date: 12/04/03
Project Owner: RICE
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 12/02/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		12/04/03	12/04/03	12/03/03
H8214-1	5 PT COMP. 3rd LINER	<10.0	<10.0	160
	1st 5' LEFT			
Quality Control		764	779	1010
True Value QC		800	800	1000
% Recovery		95.5	97.4	101
Relative Percent Difference		0.8	0.5	1.0

*Analysis performed on a 1:4 w.v aqueous extract.

Bryce A. Esch
Chemist

12/4/03
Date

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H8214.XLS

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RICE OPERATING COMPANY
122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE
AIR
LOT NO: 02-2230
EXP. DATE: 11-20-04
METER READING
ACCURACY: 99.7

SERIAL NO: ~~104412~~ RRR
104490
100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM $\pm$ 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I 9	9	I	195	38E

SAMPLE	PID RESULT	SAMPLE	PID RESULT
1st 5' Lift	34.5		
Comp. 3rd			
CLAY LINER			

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Ray R. Rossion
Signature

Environ. Project Leader
Title

12-2-03
Date

COPY

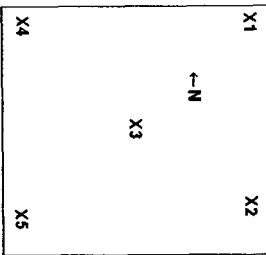
12/4/03

Lab #H8223 #1 & #2
E. Wall 5pt comp N 1/2
E. Wall 5pt comp S 1/2



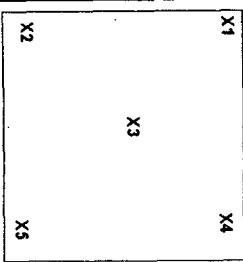
Side view of E. wall N. 1/2

approx. 14' BGS

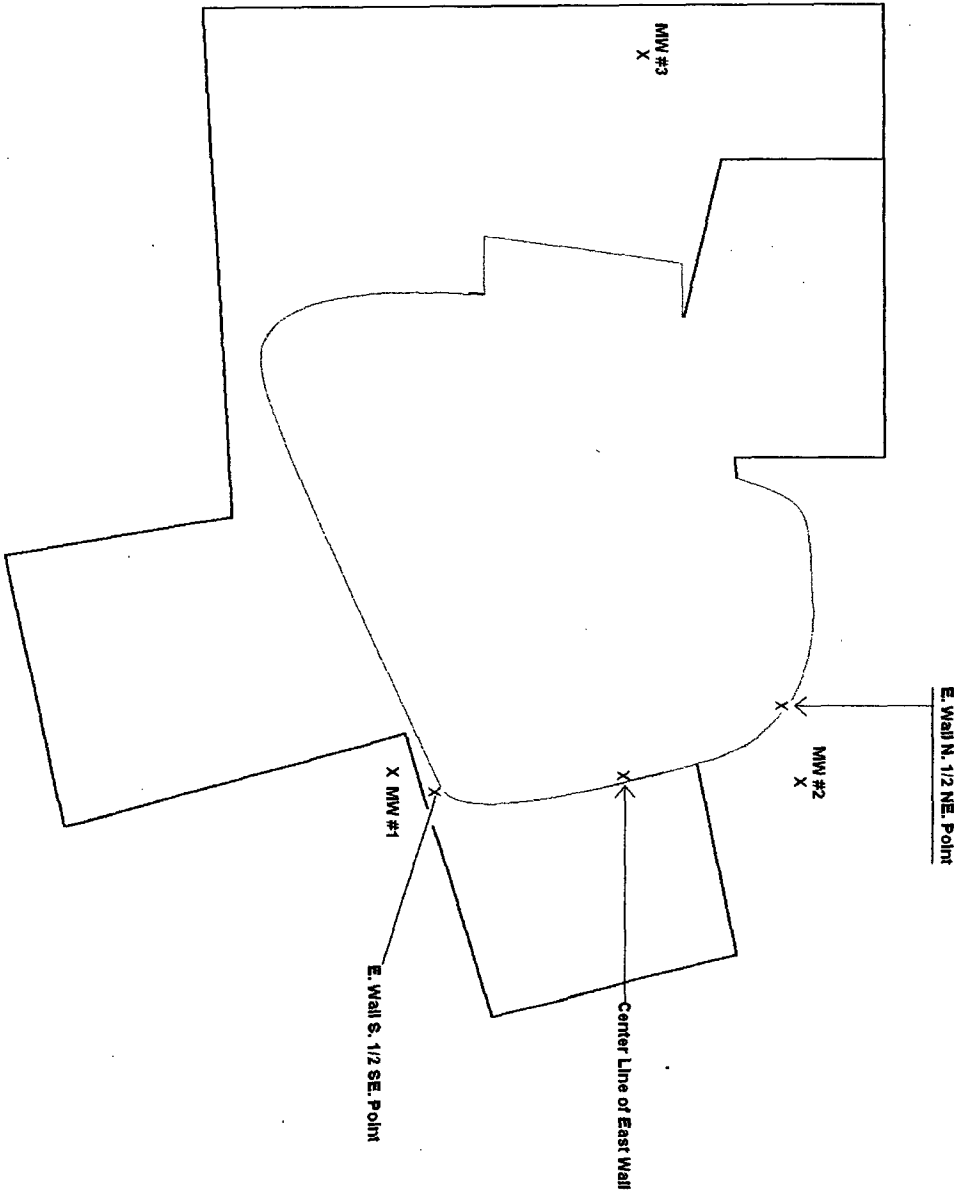


approx. 32' BGS

Side view of E. wall S 1/2
approx. 14' bgs ← N



approx. 32' bgs



E. Wall N. 1/2 NE. Point

MW #2
X

MW #3
X

Center Line of East Wall

X MW #1

E. Wall S. 1/2 SE. Point

RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 2L



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

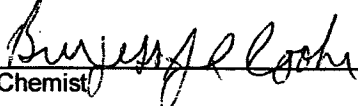
Receiving Date: 12/04/03
Reporting Date: 12/05/03
Project Owner: RICE
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 12/04/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
		12/04/03	12/04/03	12/04/03
H8223-1	E. WALL 5 PT COMP N 1/2	<10.0	<10.0	80
H8223-2	E. WALL 5 PT COMP S 1/2	<10.0	<10.0	112
Quality Control		764	779	1010
True Value QC		800	800	1000
% Recovery		95.5	97.4	101
Relative Percent Difference		0.8	0.5	1.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

*Analysis performed on a 1:4 w:v aqueous extract.


Chemist

12/5/03
Date

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H8223.XLS

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(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page _____ of _____

[illegible]

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122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM $\pm$ 2%

[illegible]

12-4-03
Date

COPY

12/5/03

Lab #H8230 #1 - #3

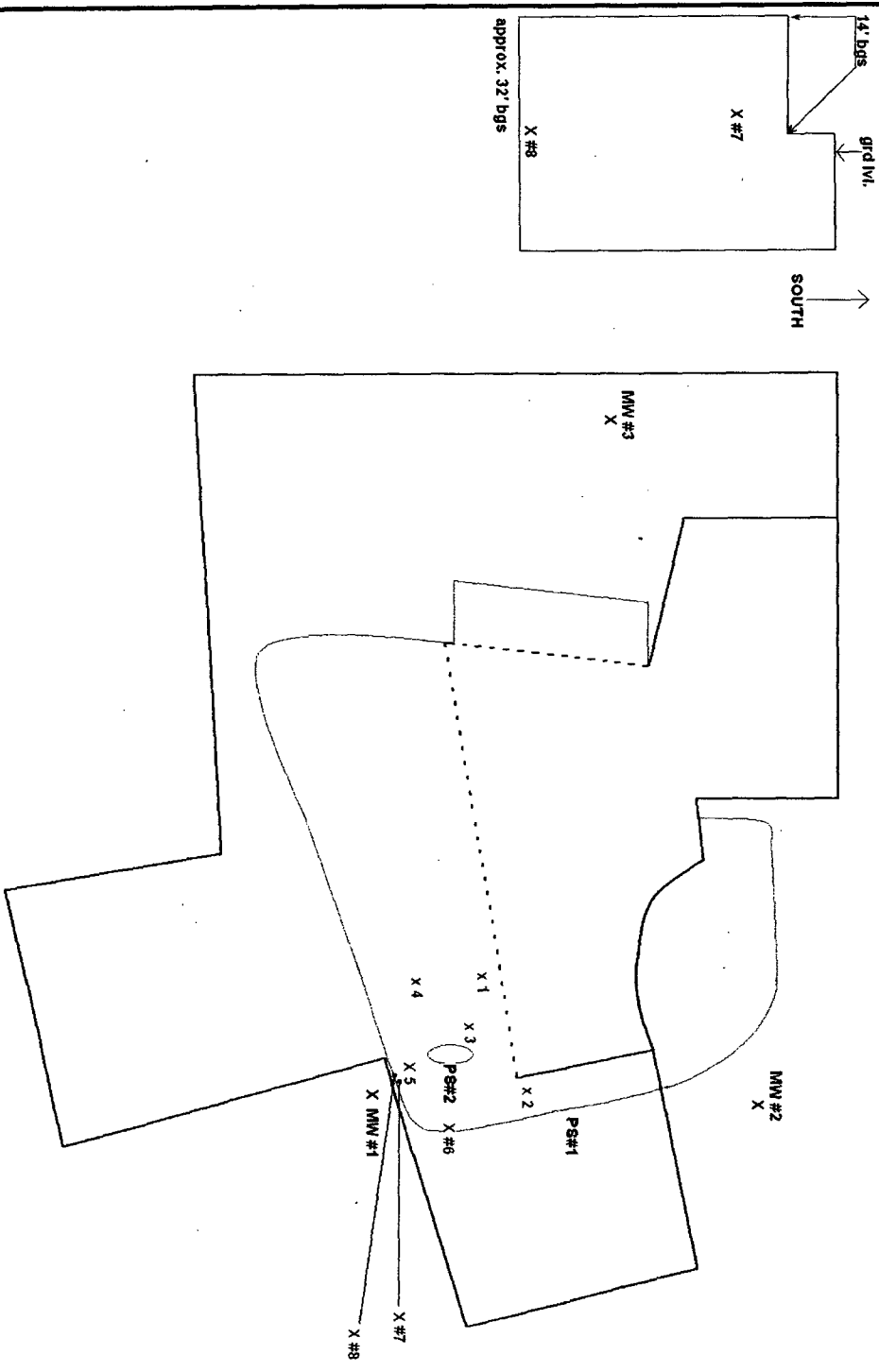
S. wall 2 pt comp SP #7 & #8

S. end @ GW @ 37' SP #6

5 pt comp S. end btm 1 - 5

*Note: Paul Sheely pulled samples at PS 1 & 2 @ 32' former water table

Slide view S. wall 2 pt comp. #7 & #8



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2J

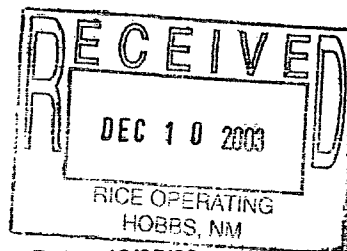


ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471



Receiving Date: 12/05/03
Reporting Date: 12/08/03
Project Owner: RICE
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 12/05/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO	DRO	CI*
		(C ₆ -C ₁₀) (mg/Kg)	(>C ₁₀ -C ₂₈) (mg/Kg)	(mg/Kg)
ANALYSIS DATE		12/05/03	12/05/03	12/08/03
H8230-1	S. WALL 2 PT COMP.	<10.0	<10.0	144
H8230-2	S. END @ G.W. @ 36'	<10.0	<10.0	80
H8230-3	5 PT COMP. S. END BTM.	<10.0	<10.0	96
Quality Control		738	752	940
True Value QC		800	800	1000
% Recovery		92.2	94.0	94.0
Relative Percent Difference		1.8	6.0	7.4

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B

*Analyses performed on 1:4 w:v aqueous extracts.

Burton J. Roche
Chemist

12/8/03
Date

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H8230.XLS

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ORDINAL LABORATORIES, INC.

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(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page _____ of _____

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

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RICE OPERATING COMPANY
122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR.

MODEL NO: PGM 761S
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE

AIR
LOT NO: 02-2230
EXP. DATE: 11-20-04
METER READING
ACCURACY: 100.0

SERIAL NO: 104412

100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM $\pm$ 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

SAMPLE	PID RESULT	SAMPLE	PID RESULT
#1	20.8		
#2	3.7		
#3	16.6		
#4	6.5		
#5	31.7		
#6	5.9		
#7	2.2		
#8	2.0		

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

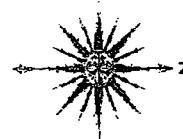
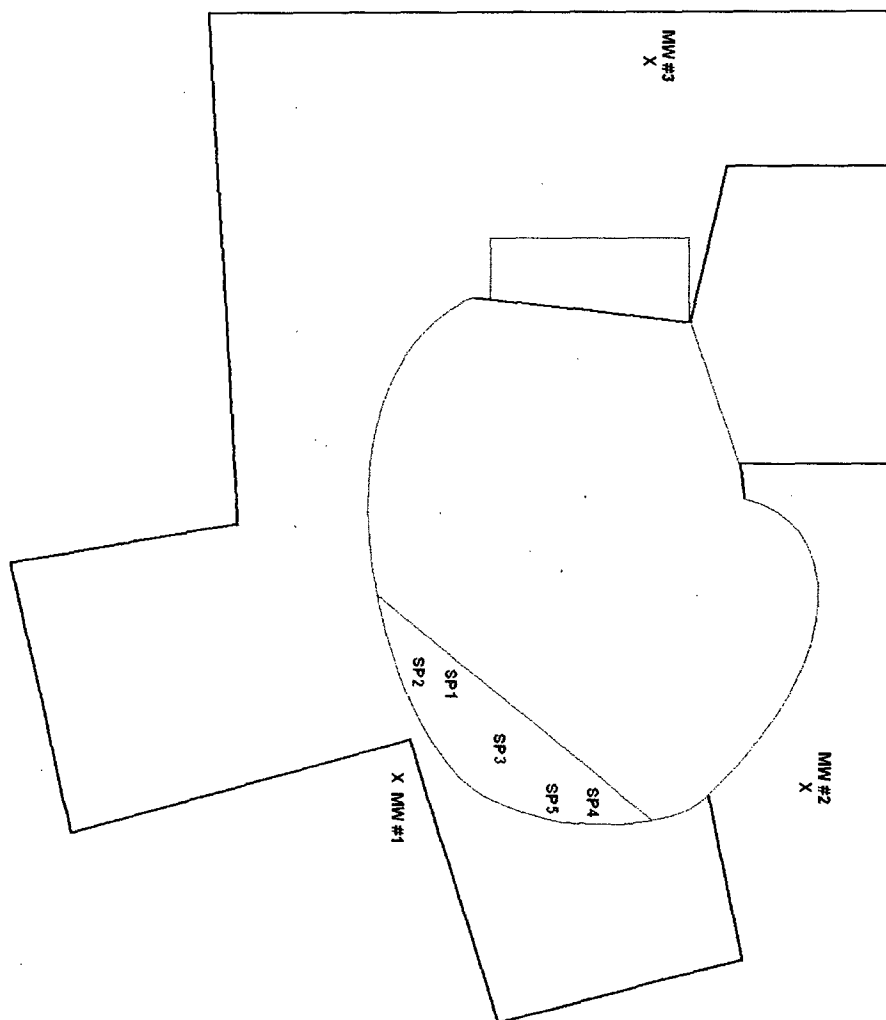
Key A. Larson
Signature

Emission Project Leader
Title

12-5-03
Date

COPY

12/11/03
 Lab #H8246 #1
 1st Backfill 5' lift south side after bttm clay liner



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

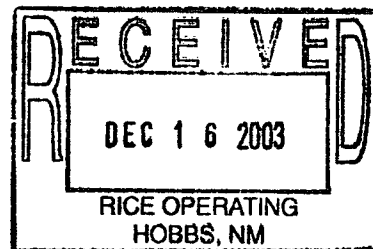
Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2M



ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240



ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 12/11/03
Reporting Date: 12/15/03
Project Owner: RICE
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 12/11/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
		12/11/03	12/11/03	12/12/03
H8246-1	S. 1st 5' LIFT 4th CLAY	<10.0	<10.0	128
	LINER			
	Quality Control	795	833	940
	True Value QC	800	800	1000
	% Recovery	99.4	104	94.0
	Relative Percent Difference	10.7	9.5	7.4

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

*Analysis performed on a 1:4 w:v aqueous extract.

Burgett & Cook
Chemist

12/15/03
Date

COPY

H8246.XLS

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CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ____ of ____

Company Name:	RICE OPER. Co.	BILL TO	ANALYSIS REQUEST
---------------	----------------	---------	------------------

Project Manager:	Roy R. RASCON	P.O. #:	
------------------	---------------	---------	--

Address:	1322 W. Taylor	Company:	
----------	----------------	----------	--

City:	Hobbs	State:	NM
-------	-------	--------	----

Phone #:	393-9174	Fax #:	397-1471
----------	----------	--------	----------

Project #:	Hobbs TCI-9	Project Owner:	RICE
------------	-------------	----------------	------

Project Name:		State:	
---------------	--	--------	--

Project Location:		Phone #:	
-------------------	--	----------	--

Sampler Name:	Roy R. RASCON	Fax #:	
---------------	---------------	--------	--

FOR LAB USE ONLY			
------------------	--	--	--

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	
----------	-------------	-------------------	--

		# CONTAINERS	
--	--	--------------	--

		GROUNDWATER	
--	--	-------------	--

		WASTEWATER	
--	--	------------	--

		SOIL	
--	--	------	--

		CRUDE OIL	
--	--	-----------	--

		SLUDGE	
--	--	--------	--

		OTHER :	
--	--	---------	--

		ACID/BASE:	
--	--	------------	--

		ICE / COOL	
--	--	------------	--

		OTHER :	
--	--	---------	--

		DATE	
--	--	------	--

		TIME	
--	--	------	--

		TPH	8015 M
--	--	-----	--------

		C	
--	--	---	--

--	--	--	--

--	--	--	--

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PLEASE NOTE: Liability and chain of custody requires identity for any chain of custody transfer. In order to be linked to the amount paid for the client for the analysis, all claims including those for negligence and any other claims 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 rendered by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collection, including attorney's fees.

Sampler Relinquished:	Date:	Received By:	Phone Result:
-----------------------	-------	--------------	---------------

	12-11-03		☐ Yes ☒ No
--	----------	--	---

Relinquished By:	Date:	Received By:	Fax Result:
------------------	-------	--------------	-------------

Roy R. RASCON	12/11/03		☐ Yes ☒ No
---------------	----------	--	---

Delivered By:	Date:	Received By:	ADD'l Phone #:
---------------	-------	--------------	----------------

	12/11/03		
--	----------	--	--

Sample:	UPS - Bue - Other:	Sample Condition:	CHECKED BY:
---------	--------------------	-------------------	-------------

		☒ Yes ☐ No	(Initials)
--	--	---	------------

COPY

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

RICE OPERATING COMPANY

122 WEST TAYLOR

HORRS, NEW MEXICO 88240

PHONE: (505) 393-9174 FAX: (505) 397-1471

VOC FIELD TEST REPORT FORM

MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S

SERIAL NO: 104412

CALIBRATION GAS

GAS COMPOSITION: ISOBUTYLENE

100 PPM

AIR

BALANCE

LOT NO: 02-2230FILL DATE: 5-20-03EXP. DATE: 11-20-04ACCURACY: 100 PPM + - 2%

METER READING

ACCURACY: 99.9

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

SAMPLE	PID RESULT	SAMPLE	PID RESULT
1	3.2		
2	3.5		
3	3.8		
4	3.7		
5	1.9		

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

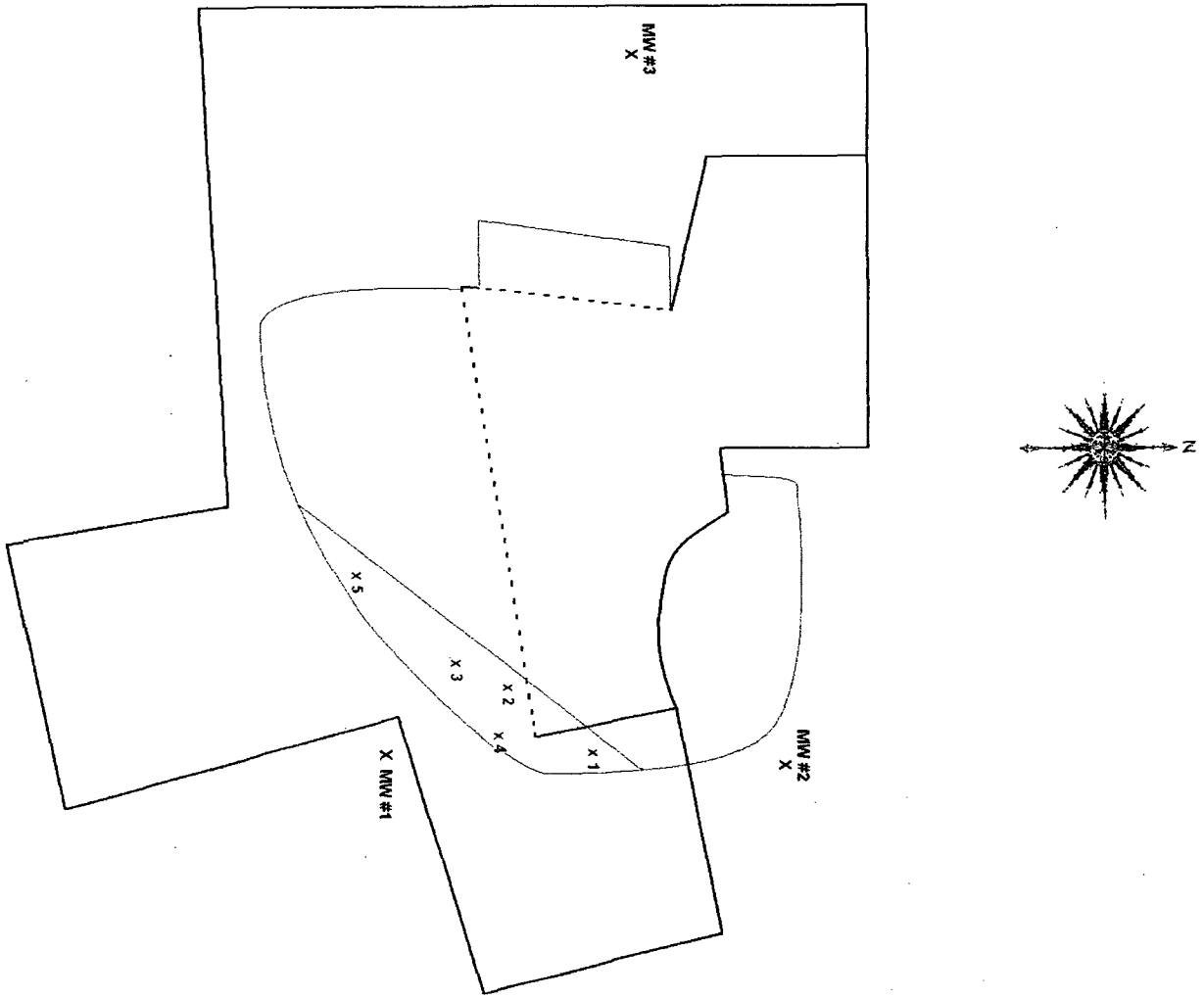
COPY

Ray K. Rascon
Signature

Environ. Project Leader
Title

12-11-03
Date

12/17/03
 Lab # H8265
 S. end 2nd 5' lift by MW #1



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

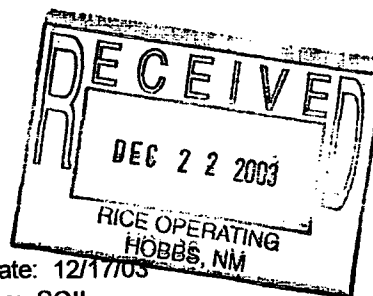
Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 21



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471



Receiving Date: 12/17/03
Reporting Date: 12/19/03
Project Number: NOT GIVEN
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 12/17/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	CI* (mg/Kg)
		12/18/03	12/18/03	12/18/03
H8265-1	S. 2nd 5' LIFT BY MW #1	<10.0	34.2	96
Quality Control		744	810	940
True Value QC		800	800	1000
% Recovery		93.0	101	94.0
Relative Percent Difference		6.7	1.2	7.4

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B

*Analysis performed on a 1:4 w:v aqueous extract.

Bryan A. Cook
Chemist

12/19/03
Date

COPY

H8265.XLS

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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

RICE OPERATING COMPANY

122 WEST TAYLOR

HOBBS, NEW MEXICO 88240

PHONE: (505) 393-9174 FAX: (505) 397-1471

VOC FIELD TEST REPORT FORM

MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S

CALIBRATION GAS

GAS COMPOSITION: ISOBUTYLENE

AIR

LOT NO: 02-2230

EXP. DATE: 11/28/04

METER READING

ACCURACY: 100.1

SERIAL NO: ¹⁰⁴⁴⁹⁰~~104412~~ RDR

100 PPM

BALANCE

FILL DATE: 5-20-03

ACCURACY: 100 PPM $\pm$ 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

S. 2nd Lift ^{5'} By MW #1

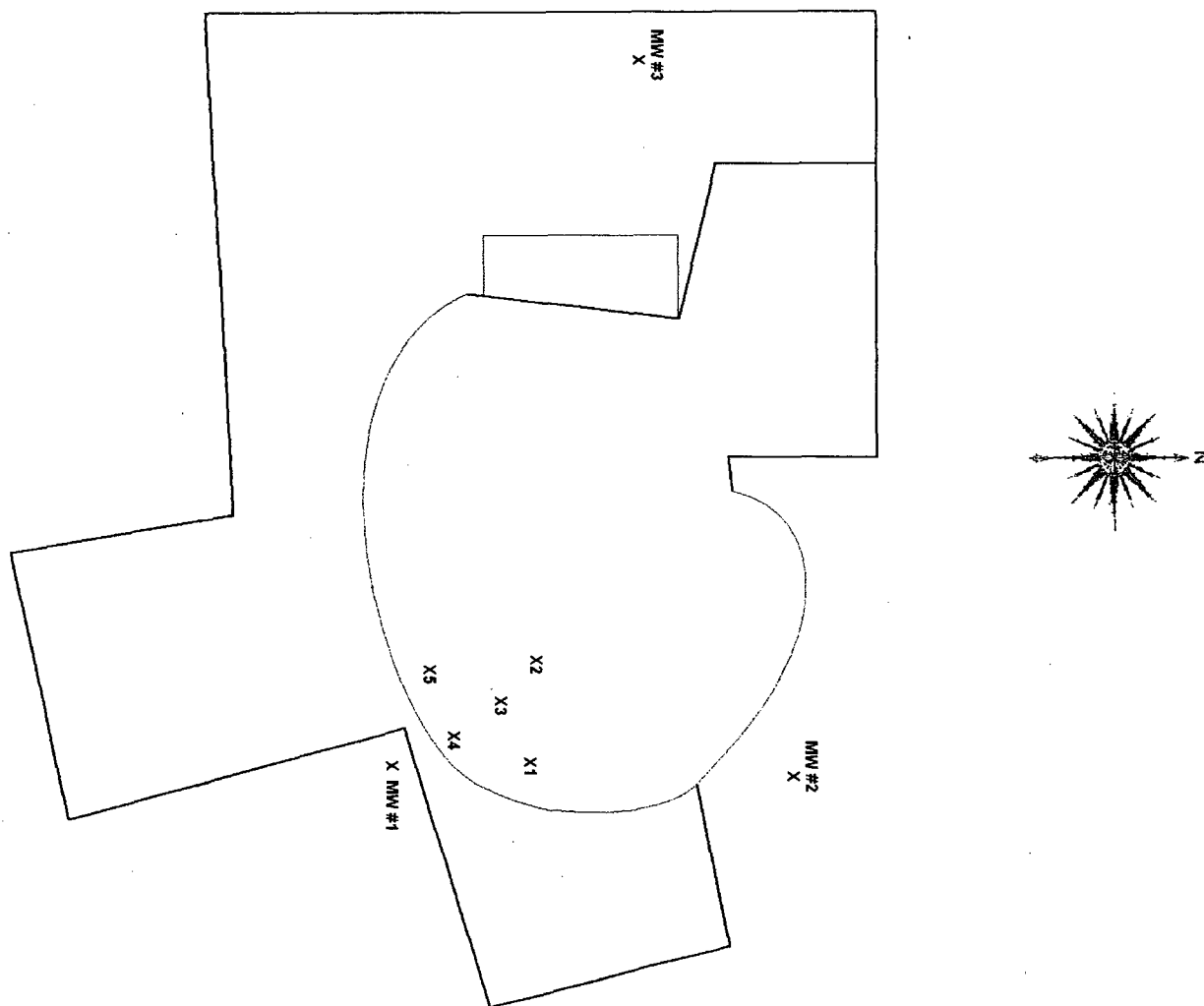
SAMPLE	PID RESULT	SAMPLE	PID RESULT
#1 NE	4.8		
#2 NW	5.2		
#3 center	9.3		
#4 SE	6.3		
#5 SW	30.0		

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Raj R. Rascon
Signature

12-17-03
Date

COPY



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

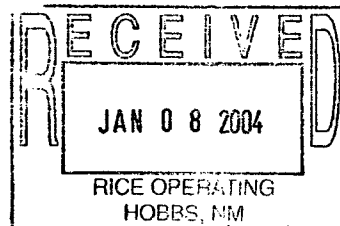
Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 2N



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: KRISTIN FARRIS
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471



Receiving Date: 12/23/03
Reporting Date: 01/06/04
Project Number: NOT GIVEN
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 12/23/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/HM

LAB NUMBER SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	CI* (mg/Kg)
	01/06/04	01/06/04	12/24/03
H8289-1 S. 3rd 5' LIFT BY MW-1	<10.0	<10.0	80
Quality Control	712	742	940
True Value QC	800	800	1000
% Recovery	89.0	92.8	94.0
Relative Percent Difference	3.4	2.3	7.4

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B

*Analysis performed on a 1:4 w:v aqueous extract.

Bryan J. Cook
Chemist

1/6/03
Date

COPY

H8289.XLS

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SERIAL NO: 104412

100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 12%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

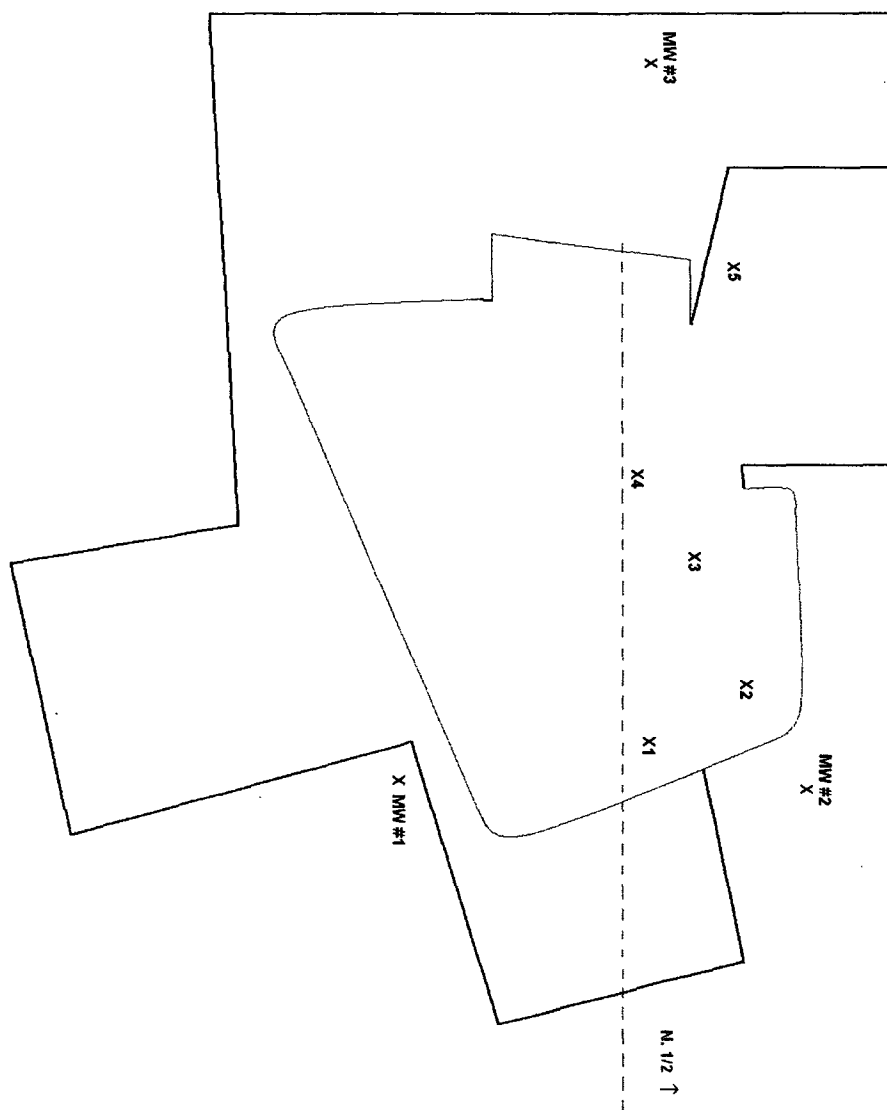
[illegible]

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Dora Suarez
Signature

12-23-03
Date

COPY



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

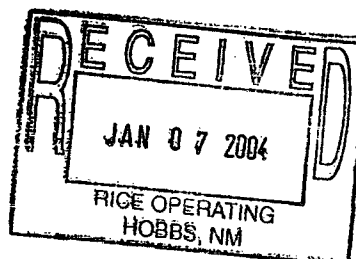
Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 2S



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471



Receiving Date: 12/30/03
Reporting Date: 01/05/04
Project Number: NOT GIVEN
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 12/30/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/HM

LAB NUMBER SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	CI* (mg/Kg)
	01/02/04	01/02/04	12/31/03
H8307-1 N. 3rd 5' COMP	<10.0	<10.0	80
Quality Control	759	799	940
True Value QC	800	800	1000
% Recovery	94.8	99.8	94.0
Relative Percent Difference	3.1	7.7	1.4

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B

*Analyses performed on 1:4 w:v aqueous extracts.

Burgess A. Loebe
Chemist

1/5/04
Date

COPY

H8307.XLS

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RICE OPERATING COMPANY
122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE
AIR
LOT NO: 02-7230
EXP. DATE: 11-20-09
METER READING
ACCURACY: 99.7

SERIAL NO: 104412
100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: 100 PPM $\pm$ 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

N. 3rd 5' Lft Comp

SAMPLE	PID RESULT	SAMPLE	PID RESULT
1	5.3		
2	5.8		
3	10.3		
4	15.0		
5	3.3		

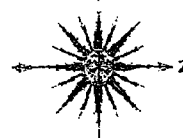
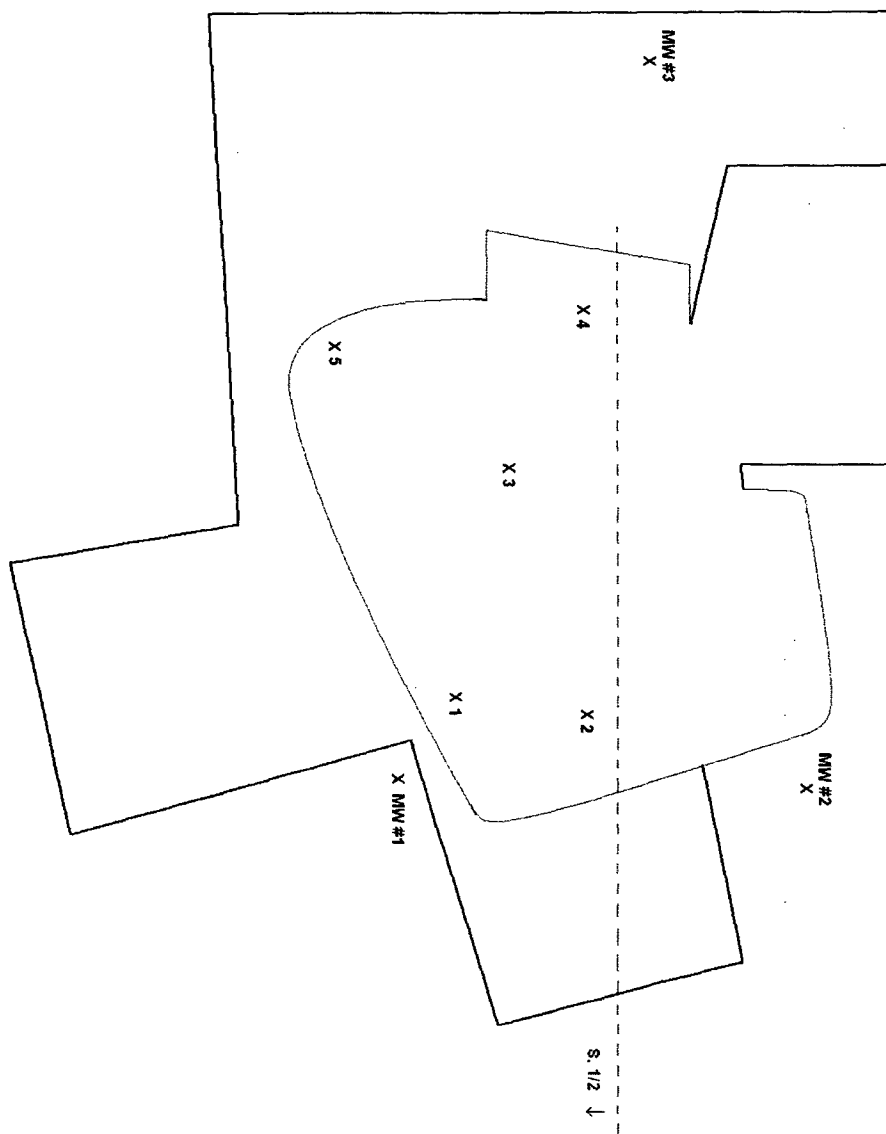
COPY

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Ray A. Larson
Signature

Environ. Project Leader
Title

12-30-03
Date



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

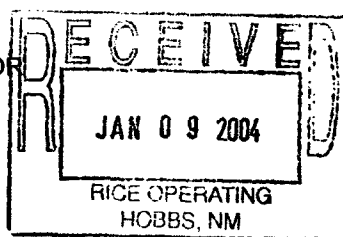
Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 2R



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471



Receiving Date: 01/06/04
Reporting Date: 01/07/04
Project Owner: RICE
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 01/06/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	CI* (mg/Kg)
		01/06/04	01/06/04	01/07/04
H8331-1	4th 5' LIFT S.1/2	<10.0	<10.0	96
Quality Control		712	742	1010
True Value QC		800	800	1000
% Recovery		89.0	92.8	101
Relative Percent Difference		3.4	2.3	7.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B

*Analysis performed on a 1:4 w:v aqueous extract.

Chemist

1/7/04
Date

COPY

H8331.XLS

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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



2111 Beechwood, Abilene, TX 79603	101 East Marland, Hobbs, NM 882400
(915) 673-7001 Fax (915) 673-7020	(505) 393-2326 Fax (505) 393-2476

Page of

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

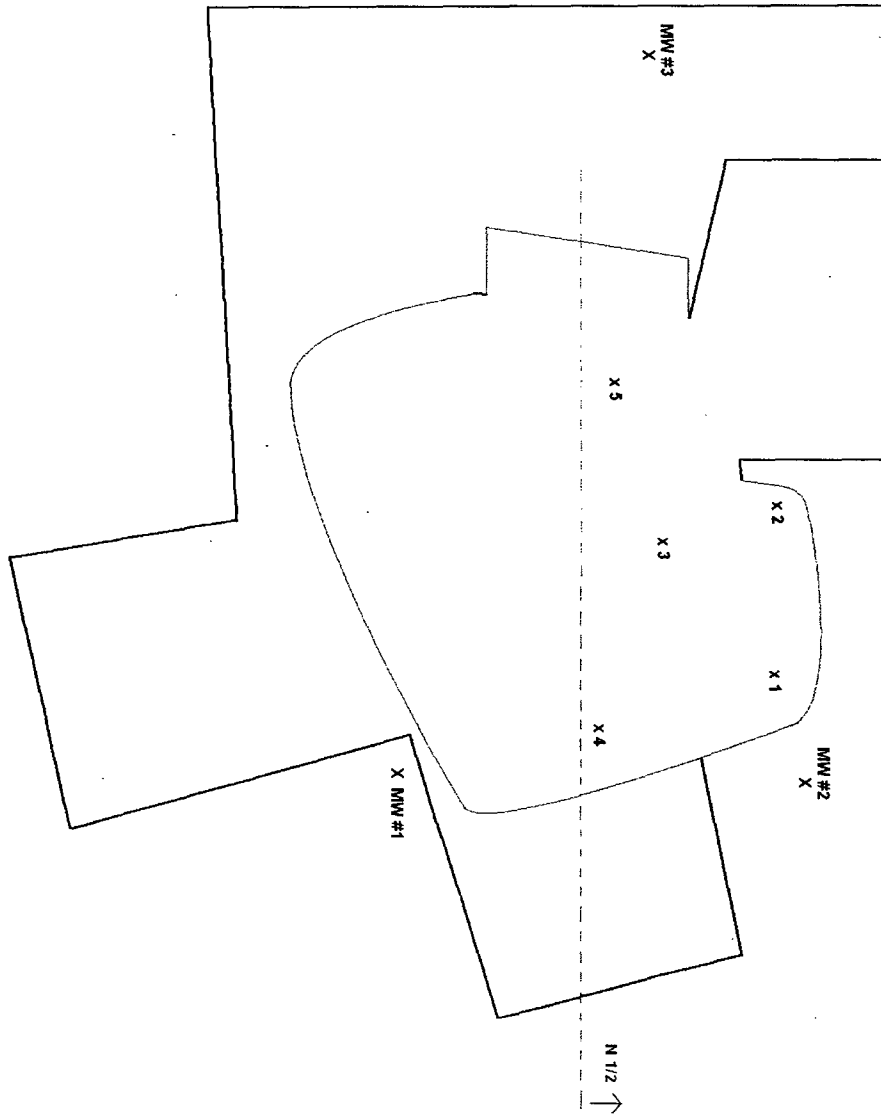
[illegible]

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

122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
VOC FIELD TEST REPORT FORM
MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

ACCURACY: 99.7

1-6-04
Date



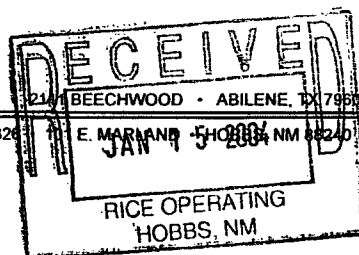
RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2T



PHONE (325) 673-7001 2141 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 E. MARIANO • HOBBS, NM 88240



ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 01/12/03
Reporting Date: 01/13/03
Project Owner: RICE
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 01/12/04
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
		01/12/04	01/12/04	01/12/04
H8347-1	N. 1/2 4th 5' LIFT	<10.0	<10.0	128
Quality Control		772	780	980
True Value QC		800	800	1000
% Recovery		96.5	97.5	98.0
Relative Percent Difference		0.5	2.6	3.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

*Analyses performed on 1:4 w:v aqueous extracts.

Bryan J. Coate
Chemist

1/13/04
Date

COPY

H8347.XLS

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RICE OPERATING COMPANY

122 WEST TAYLOR

HOBBS, NEW MEXICO 88240

PHONE: (505) 393-9174 FAX: (505) 397-1471

VOC FIELD TEST REPORT FORM

MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S

SERIAL NO: 104412

CALIBRATION GAS

GAS COMPOSITION: ISOBUTYLENE

100 PPM

AIR

BALANCE

LOT NO: 02-2230FILL DATE: 5-20-03EXP. DATE: 11-20-04ACCURACY: 100 PPM +/- 2%

METER READING

ACCURACY: 99.7

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

N 1/2 4th 5' Lift

SAMPLE	PID RESULT	SAMPLE	PID RESULT
1 NE	3.3		
2 NW	6.9		
3 Center	3.6		
4 SE	4.8		
5 S.W	2.0		

COPY

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Ray R. Lasson
Signature

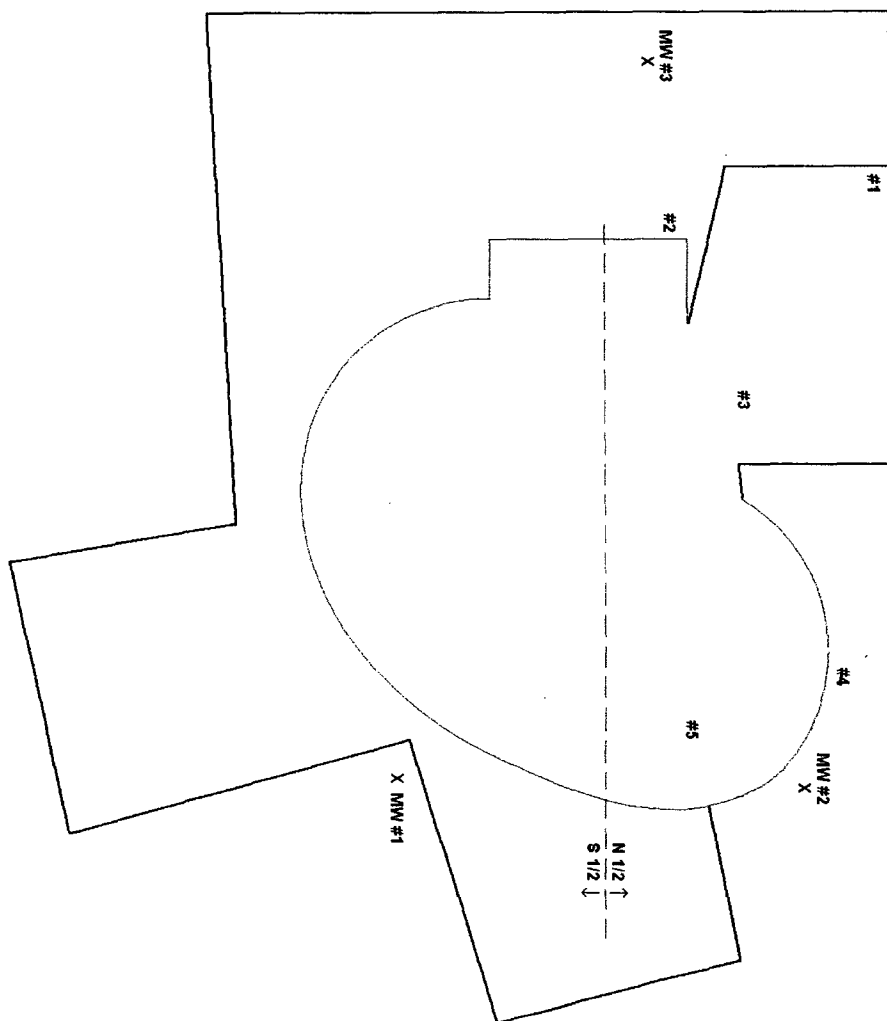
Environ. Project Leader
Title

1-12-04
Date

1/26/03

Lab #H8407

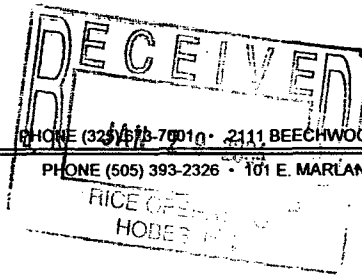
1st 5' lift after clay liner @ 8' bgs N 1/2



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 20



ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: ROY R. RASCON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 01/27/04
Reporting Date: 01/28/04
Project Number: NOT GIVEN
Project Name: HOBBS JCT I-9
Project Location: NOT GIVEN

Sampling Date: 01/27/04
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
		01/27/04	01/27/04	01/27/04
H8407-1	1st 5' AFTER CLAY LINER	<10.0	<10.0	176
	8 BGS N 1/2			
Quality Control		733	774	1000
True Value QC		800	800	1000
% Recovery		91.7	96.8	100
Relative Percent Difference		1.3	2.5	1.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

*Analysis performed on a 1:4 w:v aqueous extract.

Bryson Cook
Chemist

1/28/04
Date

COPY

H8407.XLS

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RICE OPERATING COMPANY

122 WEST TAYLOR

HOBBS, NEW MEXICO 88240

PHONE: (505) 393-9174 FAX: (505) 397-1471

VOC FIELD TEST REPORT FORM

MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S

CALIBRATION GAS

GAS COMPOSITION: ISOBUTYLENE

AIR

LOT NO: #02-2230

EXP. DATE: 11-20-04

METER READING

ACCURACY: 100.0

SERIAL NO: 104412

104490

100 PPM

BALANCE

FILL DATE: 5-20-03

ACCURACY: 100 ± 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9		

1st 5' AFTER CLAY LINER @ 8' BGS N 1/2

SAMPLE	PID RESULT	SAMPLE	PID RESULT
#1	3.4		
#2	2.9		
#3	2.7		
#4	2.2		
#5	2.3		
CI- Field test Composite 183 PPM			

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Roy R. Larson
Signature

1-26-04
Date

COPY

1st 5' lift after caly liner @ 8' bgs S. 1 1/2

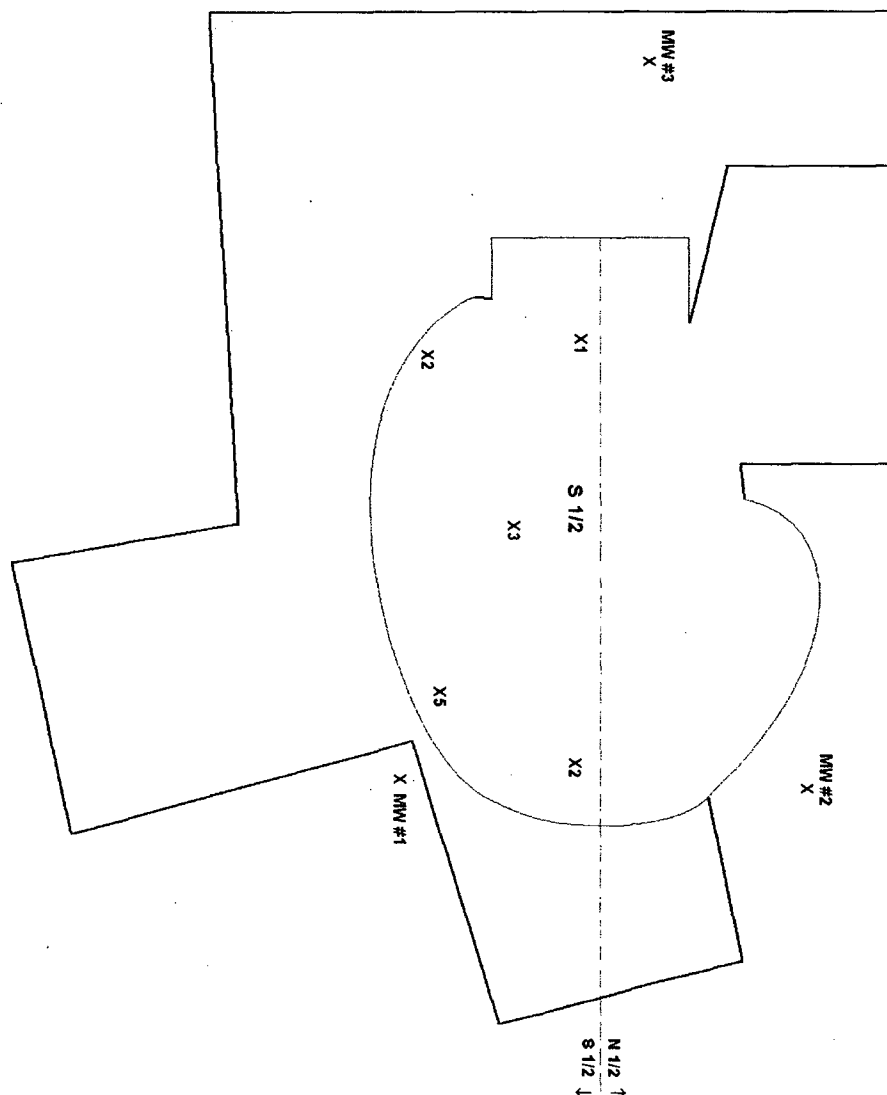
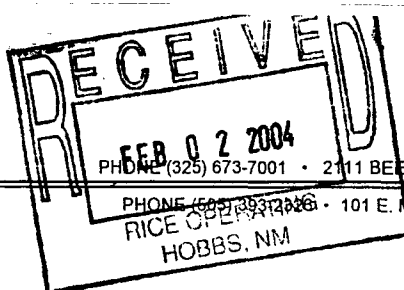


Figure 2P



ARDINAL LABORATORIES



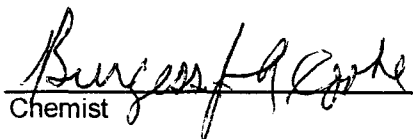
ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: KRISTIN FARRIS
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

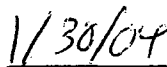
Receiving Date: 01/29/04
Reporting Date: 01/30/04
Project Number: NOT GIVEN
Project Name: HOBBS JCT. I-9
Project Location: NOT GIVEN

Sampling Date: 01/29/04
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO	DRO	CI*
		(C ₆ -C ₁₀) (mg/Kg)	(>C ₁₀ -C ₂₈) (mg/Kg)	(mg/Kg)
ANALYSIS DATE		01/29/04	01/29/04	01/29/04
H8420-1	FIRST 5' LIFT AFTER CLAY	<10.0	<10.0	112
	LINER @ 8' 5 1/2' PER			
	2-2-04			
Quality Control		733	774	1020
True Value QC		800	800	1000
% Recovery		91.7	96.8	102
Relative Percent Difference		1.3	2.5	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B
*Analysys performed on a 1:4 w:v aqueous extract.


Chemist


Date

COPY

H8420.XLS

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CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ____ of ____

ANALYSIS REQUEST

FILE TO

Company Name: **RICE Operating**

Project Manager: **Kristin Farris**

Address: **122 W Taylor**

City: **Hobbs** State: **NM** Zip: **88240**

Phone #: **393-9174** Fax #: **397-1471**

Project #: _____ Project Owner: _____

Project Name: **Hobbs Jct. I-9**

Project Location: _____

Sampler Name: **Israel Juarez**

OR LAB USE ONLY

Lab I.D.

Sample I.D.

(G)RAB OR (C)OMP. # CONTAINERS
GROUNDWATER
WASTEWATER
SOIL
CRUDE OIL
SLUDGE
OTHER :
ACID/BASE:
ICE / COOL
OTHER :

DATE TIME

TPH 8015 M
CI

NOTE: Liability and Damages: Cardinal's liability and damages are limited to the amount paid for the analysis. No other damages, including those for negligence and any other causes whatsoever, shall be deemed waived or released by Cardinal. 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, or successors arising out of or related to the performance of services hereunder by Cardinal. Receipts of whether such claim is based upon any of the above stated reasons or otherwise, shall be retained by Cardinal.

Project Requisitioned:

Date: **1-29-04**

Received By:

Requisitioned By: **Israel Juarez**

Date: **1-29-04**

Received By: (Lab Staff)

Delivered By: (Circle One)

Project 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:

Fax to RICE

COPY

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

RICE OPERATING COMPANY

122 WEST TAYLOR

HOBBS, NEW MEXICO 88240

PHONE: (505) 393-9174 FAX: (505) 397-1471

VOC FIELD TEST REPORT FORM

MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S

SERIAL NO: 104412

CALIBRATION GAS

GAS COMPOSITION: ISOBUTYLENE

100 PPM

AIR

BALANCE

LOT NO: 02-2230

FILL DATE: 5-20-03

EXP. DATE: 11-20-04

ACCURACY: 100 PPM $\pm$ 2%

METER READING

ACCURACY: 99.7

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

SAMPLE	PID RESULT	SAMPLE	PID RESULT
1 N.W.	4.0		
2 N.E.	4.8		
3 Center	3.6		
4 S.W.	6.0		
5 S.E.	5.3		

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

COPY

Ray L. Lascon

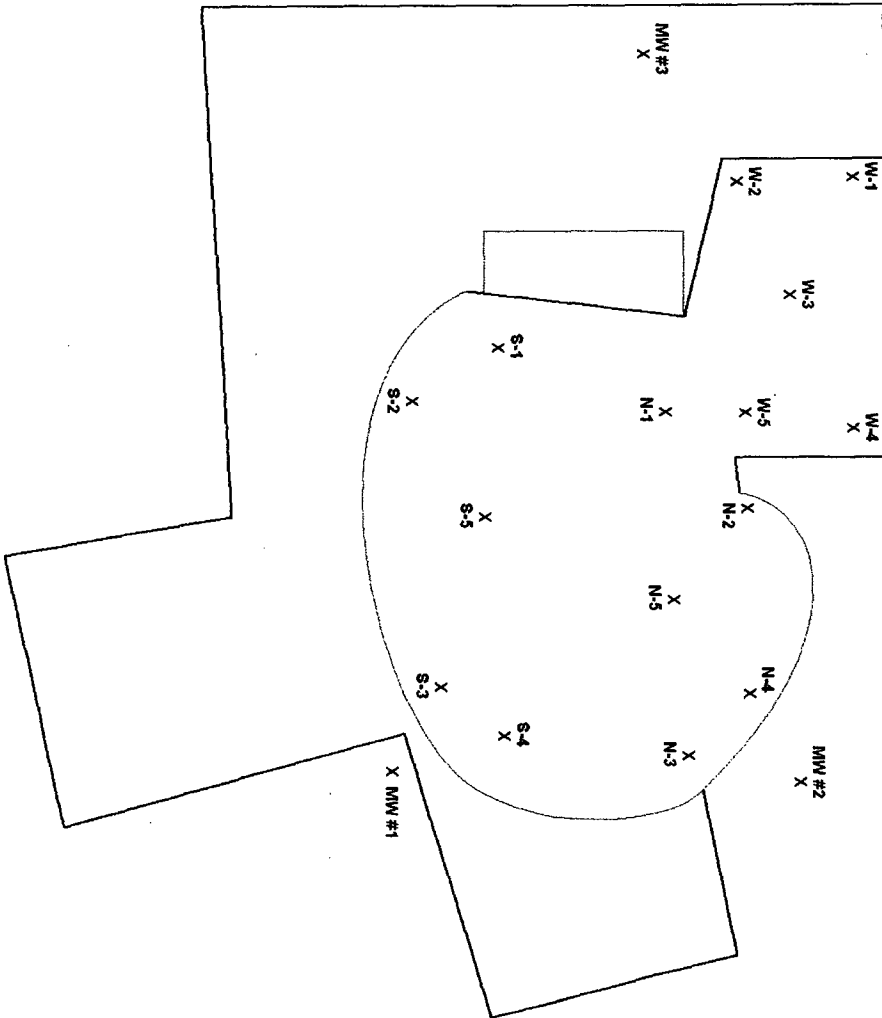
Signature

Environ. Project Leader

Title

1-29-04

Date



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 20

RICE OPERATING COMPANY

122 WEST TAYLOR

HOBBS, NEW MEXICO 88240

PHONE: (505) 393-9174 FAX: (505) 397-1471

VOC FIELD TEST REPORT FORM

MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S

SERIAL NO: 104412

CALIBRATION GAS

GAS COMPOSITION: ISOBUTYLENE

100 PPM

AIR

BALANCE

LOT NO: 02-2230FILL DATE: 5-20-03EXP. DATE: 11-20-04ACCURACY: 100 PPM $\pm$ 2%

METER READING

ACCURACY: 100.0

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
Hobbs	I-9	I	9	19	38

Final Lift Surface Samples

SAMPLE	PID RESULT	SAMPLE	PID RESULT
West Comp	3.5 PPM	S. Comp	
1	2.3 PPM 3.5	1	4.6
2	2.3 PPM 2.3	2	2.8
3	4.5 PPM 2.3	3	3.9
4	4.5 PPM 4.5	4	1.5
5	1.7	5	2.7
North Comp			
1	3.5		
2	4.5		
3	3.2		
4	2.1		
5	1.8		

COPY

I certify that I have calibrated the above instrument in accordance to the manufacture operation manual.

Ray R. Robison
Signature

Environ. Project Leader
Title

2-5-04
Date

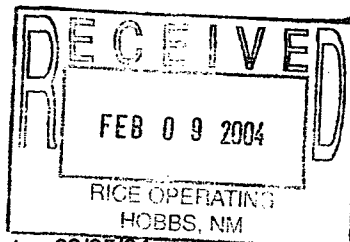


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PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: KRISTIN FARRIS
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471



Receiving Date: 02/05/04
Reporting Date: 02/06/04
Project Number: NOT GIVEN
Project Name: I-9
Project Location: HOBBS, NM

Sampling Date: 02/05/04
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	CI* (mg/Kg)
		02/05/04	02/05/04	02/06/04
H8435-1	SURFACE LIFT COMP.	<10.0	<10.0	144
Quality Control		733	774	1020
True Value QC		800	800	1000
% Recovery		91.7	96.8	102
Relative Percent Difference		1.3	2.5	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B

*Analysis performed on a 1:4 w:v aqueous extract.

Chemist

2/6/04
Date

COPY

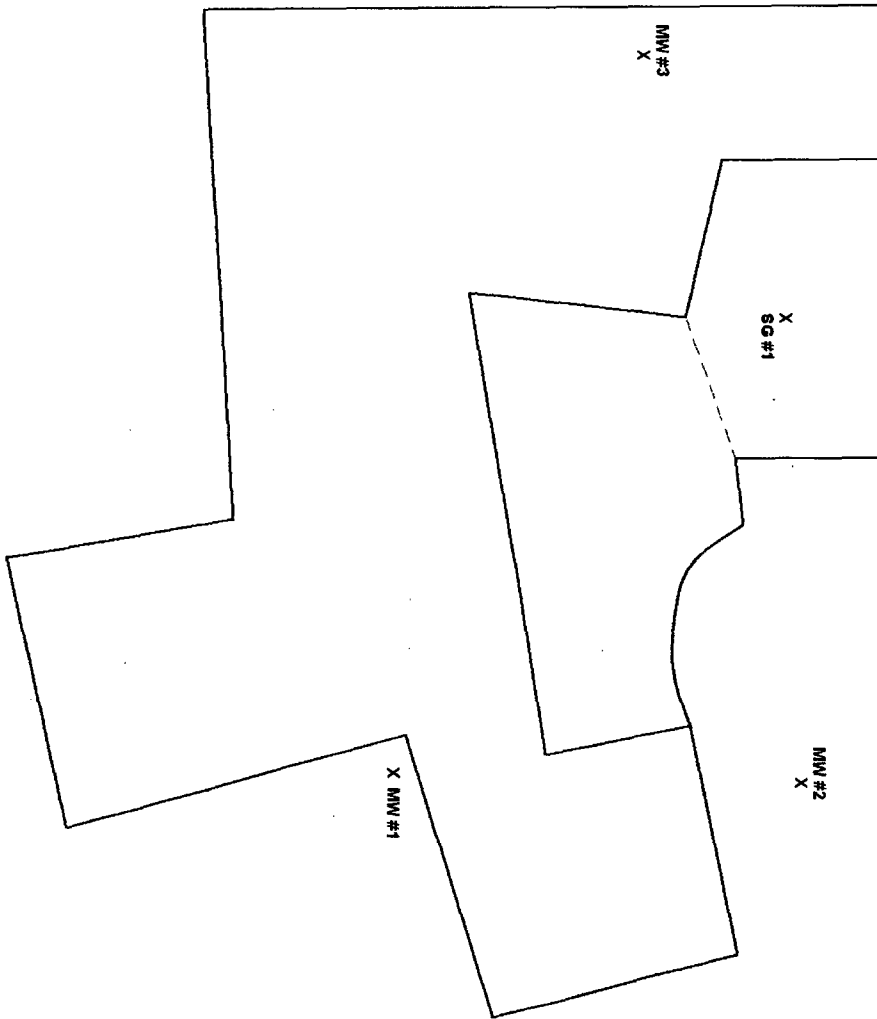
H8435.XLS

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ARCADIS

Appendix D

Stage 2 Abatement Report



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 2Y



LABORATORY TEST REPORT
PETTIGREW and ASSOCIATES, P.A.
1110 N. GRIMES
HOBBS, NM 88240
(505) 393-9827



DEBRA P. HICKS, P.E./L.S.I.
WILLIAM M. HICKS, III, P.E./P.S.

To: Rice Operating Corporation
Attn: Carolyn Haynes
122 W. Taylor
Hobbs, NM 88240

Material: Red Clay

Test Method: ASTM: D 2922

Project: Hobbs Junction I-9

Date of Test: October 2, 2003

Depth: 34' Below Finished Subgrade

Test No.	Location	Dry Density % Maximum	% Moisture	Depth
SG-1	N. Section of Pit - 30' S. & 15' E. of the NW Corner	100.3	18.1	

Control Density: 107.2
ASTM: D 698

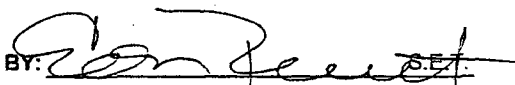
Optimum Moisture: 18.0%

Required Compaction: 95%

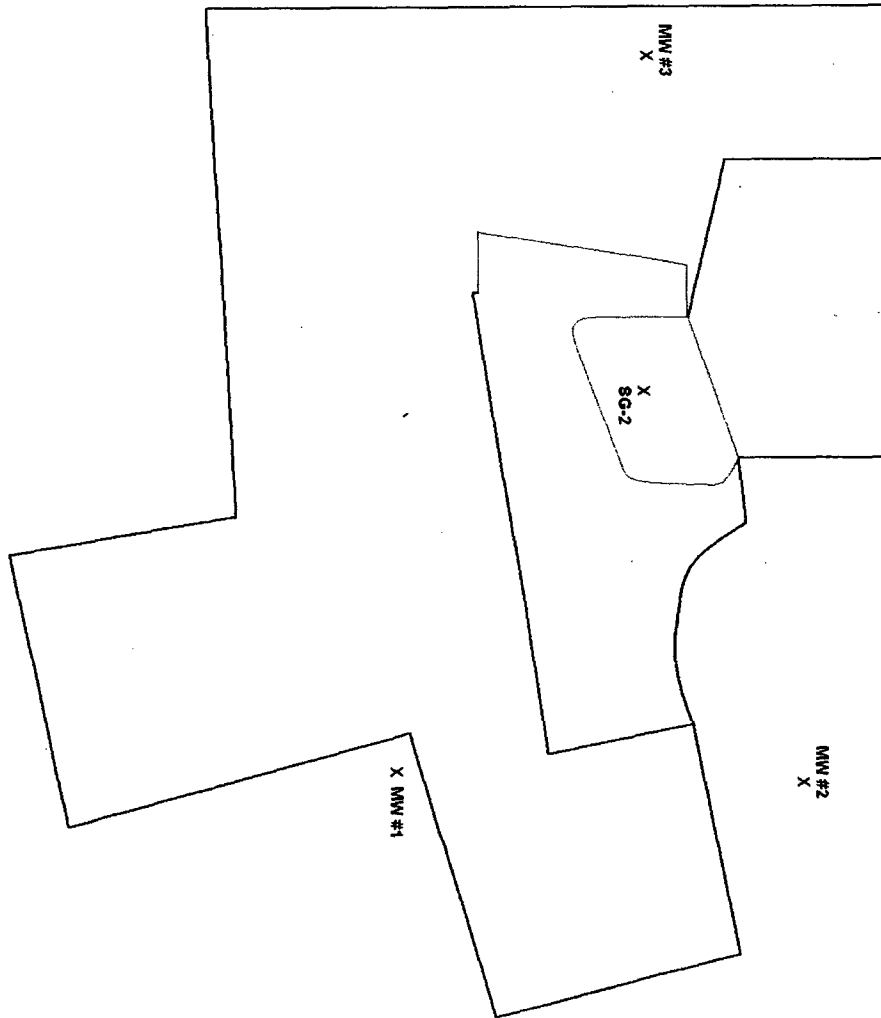
Lab No.: 03 6177

Copies To: Rice Operating

PETTIGREW and ASSOCIATES

BY:  P.E.

COPY



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 2X



LABORATORY TEST REPORT
PETTIGREW and ASSOCIATES, P.A.
1110 N. GRIMES
HOBBS, NM 88240
(505) 393-9827



DEBRA P. HICKS, P.E./L.S.I.
WILLIAM M. HICKS, III, P.E./P.S.

To: Rice Operating Corporation
Attn: Carolyn Haynes
122 W. Taylor
Hobbs, NM 88240

Material: Red Clay

Test Method: ASTM: D 2922

Project: Hobbs Junction I-9

Date of Test: October 28 2003

Depth: Finished Subgrade

Test No.	Location	Dry Density % Maximum	% Moisture	Depth
SG-2	Pit - Center of Excavation	100.8	20.1	

Control Density: 103.9
ASTM: D 698

Optimum Moisture: 21.4%

Required Compaction: 95%

Lab No.: 03 6568

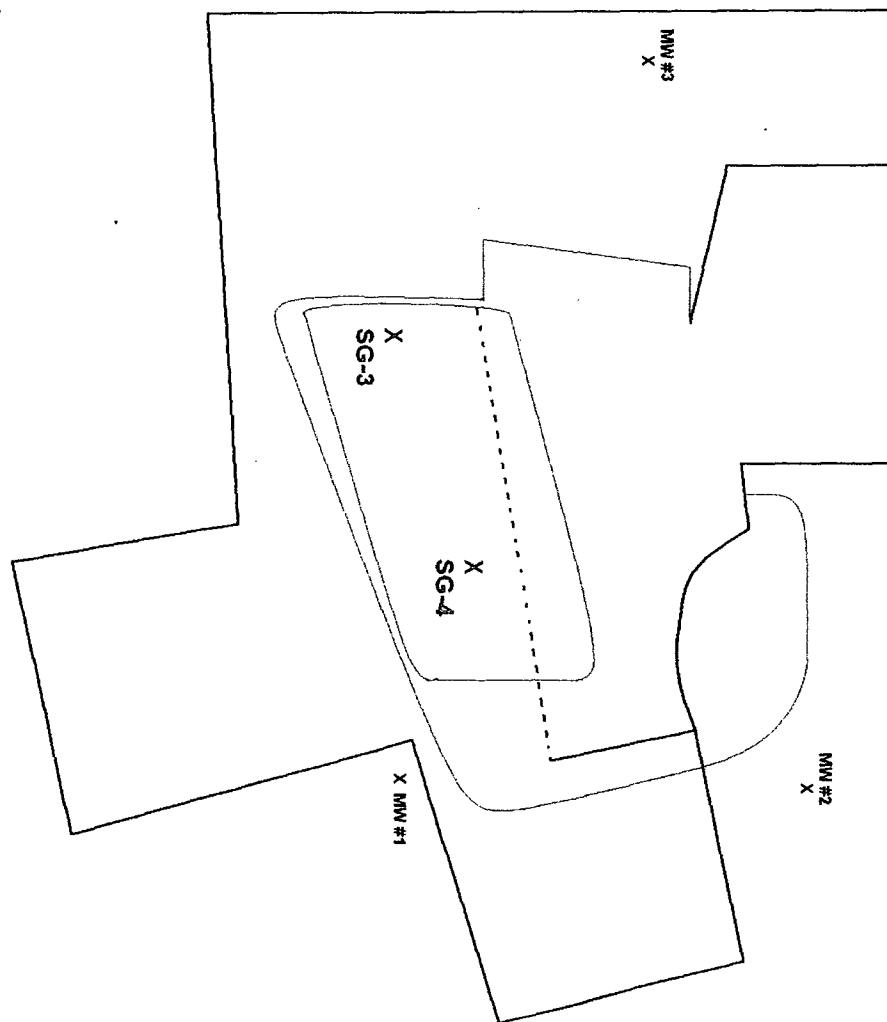
Copies To: Rice Operating

PETTIGREW and ASSOCIATES

BY

COPY

12/1/03 Pettigrew & Associates, P. A.
 Lab #03 7128-7129
 3rd clay liner density test @ 30'



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2W



LABORATORY TEST REPORT
PETTIGREW and ASSOCIATES, P.A.
1110 N. GRIMES
HOBBS, NM 88240
(505) 393-9827



DEBRA P. HICKS, P.E./L.S.I.
WILLIAM M. HICKS, III, P.E./P.S.

To: Rice Operating Corporation
Attn: Carolyn Haynes
122 W. Taylor
Hobbs, NM 88240

Material: Red Clay

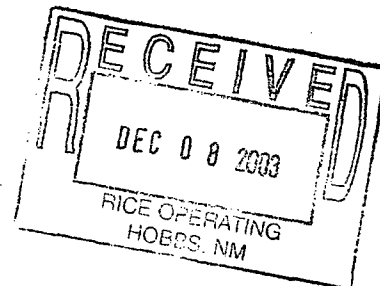
Test Method: ASTM: D 2922

Project: Hobbs Junction I-9

Date of Test: December 1, 2003

Depth: 13' Below Finished Subgrade

Test No.	Location	Dry Density % Maximum	% Moisture	Depth
SG-3	Pit - 50' N. & 35' W. of the SE Corner	105.0	16.7	
SG-3	Pit - 45' N. & 25' E. of the SW Corner	102.6	18.5	



Control Density: 104.2
ASTM: D 698

Optimum Moisture: 23.1%

Required Compaction: 95%

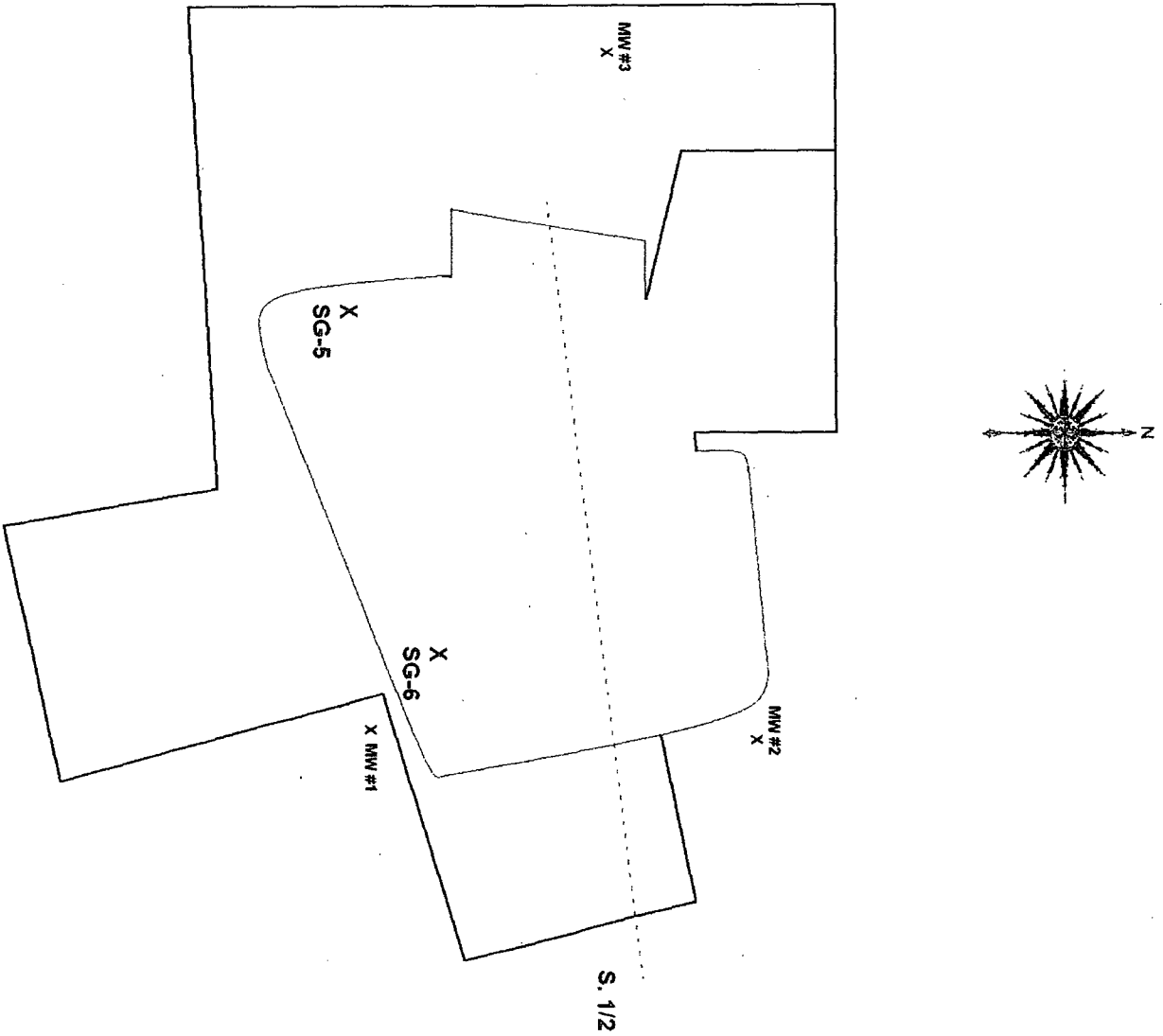
Lab No.: 03 7128-7129

PETTIGREW and ASSOCIATES

Copies To: Rice Operating

BY: *[Signature]* SET

COPY



RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date	File Location	Complier	Project Manager	Area Manager
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes
Rice Operating Company				Checked
Junction I-9 State 2 Remediation				R. Rascon
Sampling Points				Figure 2V



LABORATORY TEST REPORT
PETTIGREW and ASSOCIATES, P.A.
1110 N. GRIMES
HOBBS, NM 88240
(505) 393-9827



DEBRA P. HICKS, P.E./L.S.I.
WILLIAM M. HICKS, III, P.E./P.S.

To: Rice Operating Corporation
Attn: Carolyn Haynes
122 W. Taylor
Hobbs, NM 88240

Material: Red Clay

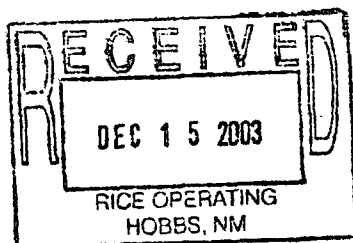
Test Method: ASTM: D 2922

Project: Hobbs Junction I-9

Date of Test: December 10, 2003

Depth: 29' Below Finished Subgrade

Test No.	Location	Dry Density % Maximum	% Moisture	Depth
SG-5	Pit - 20' N. & 40' W. of the SE Corner	100.8	20.5	
SG-6	Pit - 10' S. & 15' W. of the NE Corner	101.0	18.6	



Control Density: 104.2
ASTM: D 698

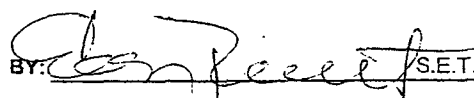
Optimum Moisture: 23.1%

Required Compaction: 95%

Lab No.: 03 7467-7467a

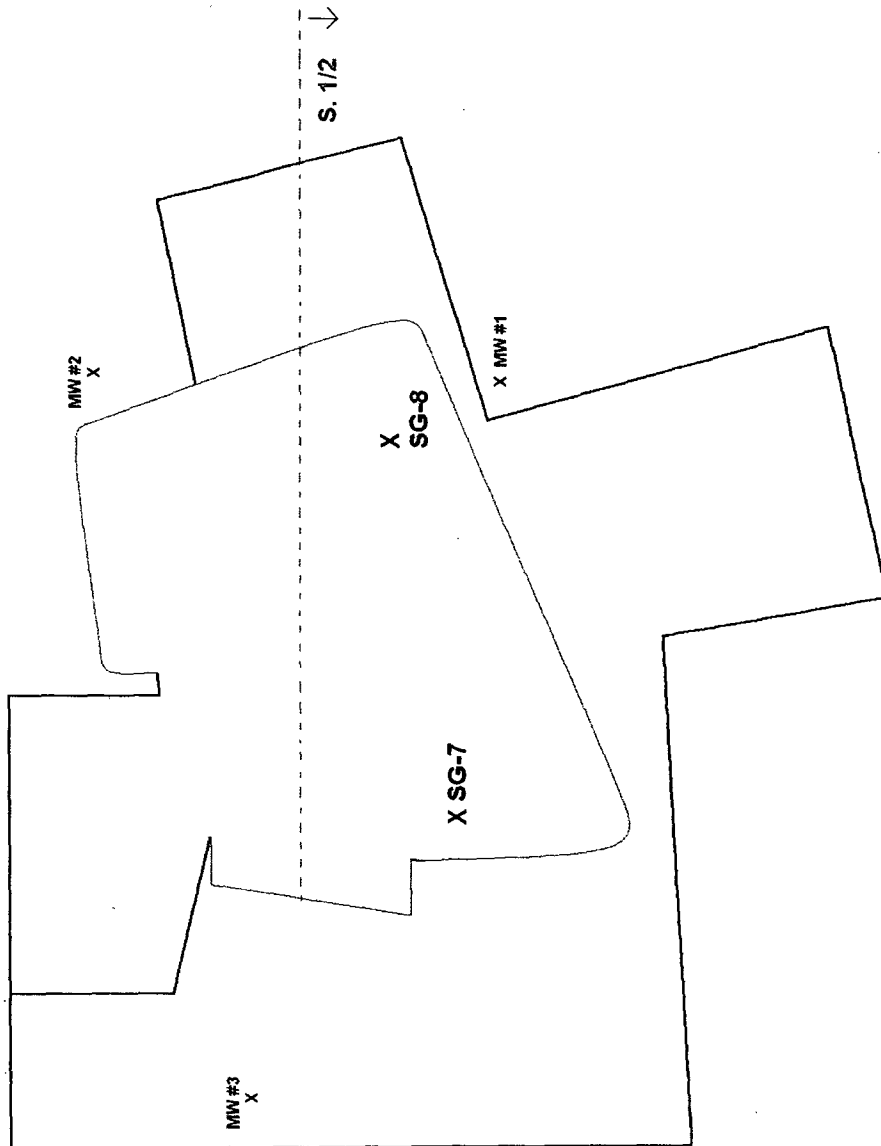
Copies To: Rice Operating

PETTIGREW and ASSOCIATES

BY:  S.E.T.

COPY

1/3/04 Pettigrew & Associates, P.A.
 Lab #04 1275-1276
 Top clay liner @ approx 6' to 7' bgs



RICE OPERATING COMPANY				122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471	
Date	File Location	Complier	Project Manager	Area Manager	Checked
July 7, 2004	Drawing/ROC	S. Hicks	R. Rascon	C. Haynes	R. Rascon
Rice Operating Company			Junction I-9 State 2 Remediation		
Sampling Points			Figure 2U		



LABORATORY TEST REPORT
PETTIGREW and ASSOCIATES, P.A.
1110 N. GRIMES
HOBBS, NM 88240
(505) 393-9827



DEBRA P. HICKS, P.E./L.S.L.
WILLIAM M. HICKS, III, P.E./P.S.

To: Rice Operating Corporation
Attn: Carolyn Haynes
122 W. Taylor
Hobbs, NM 88240

Material: Red Clay

Test Method: ASTM: D 2922

Project: Hobbs Junction I-9

Date of Test: January 13, 2004

Depth: 6 1/2' Below Finished Subgrade

Test No.	Location	Dry Density % Maximum	% Moisture	Depth
SG-7	Pit - 100' W. & 25' N. of the SE Corner - S. Area	99.0	20.5	
SG-8	Pit - 50' W. & 30' N. of the SE Corner - S. Area	99.4	20.8	

Control Density: 104.2
ASTM: D 698

Optimum Moisture: 21.4%

Required Compaction: 95%

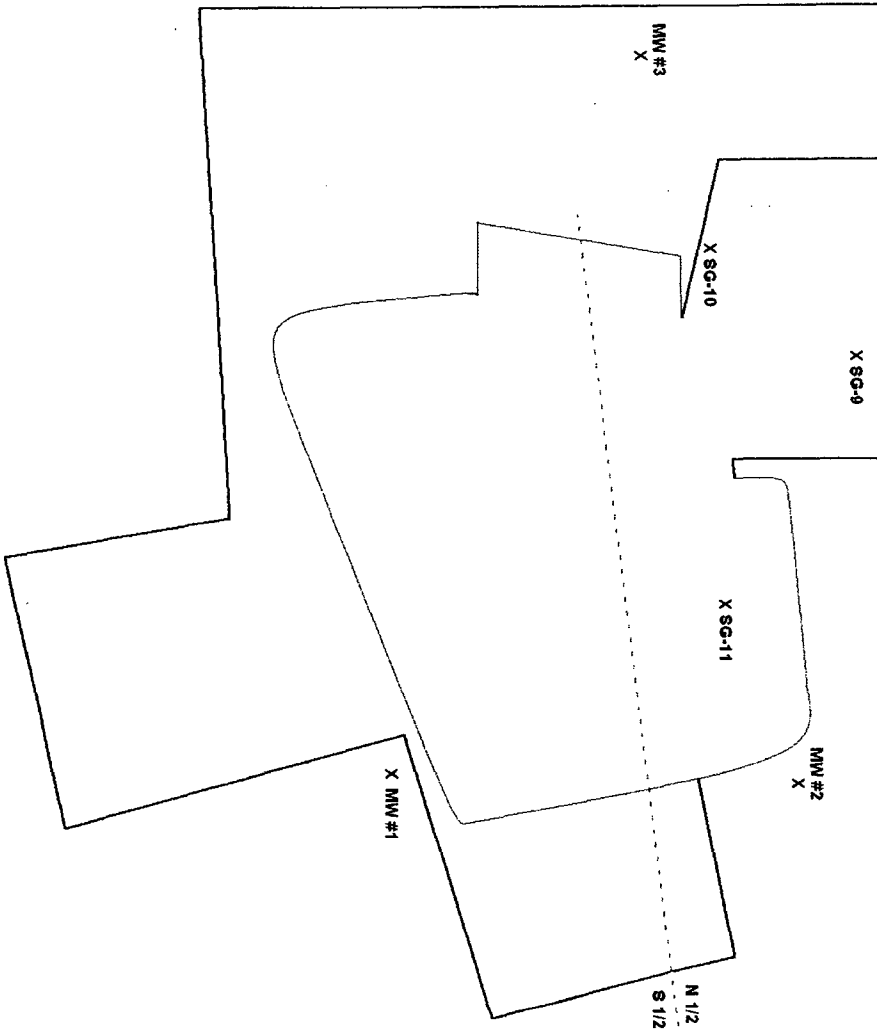
Lab No.: 04 1275-1276

Copies To: Rice Operating

PETTIGREW and ASSOCIATES

BY:

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RICE OPERATING COMPANY

122 W. Taylor Hobbs, New Mexico 88240 Tel: (505)393-9174 Fax: (505)397-1471

Date July 7, 2004	File Location Drawing/ROC	Complier S. Hicks	Project Manager R. Rascon	Area Manager C. Haynes
Rice Operating Company Junction I-9 State 2 Remediation Sampling Points				Checked R. Rascon
				Figure 2Z



LABORATORY TEST REPORT
PETTIGREW and ASSOCIATES, P.A.
1110 N. GRIMES
HOBBS, NM 88240
(505) 393-9827



DEBRA P. HICKS, P.E./S.L.
WILLIAM M. HICKS, III, P.E./S.L.

To: Rice Operating Corporation
Attn: Carolyn Haynes
122 W. Taylor
Hobbs, NM 88240

Material: Red Clay

Project: Hobbs Junction I-9

Test Method: ASTM: D 2922

Date of Test: January 20, 2004

Depth: 6' Below Finished Subgrade

Test No.	Location	Dry Density % Maximum	% Moisture	Depth
SG-9	W. Side of N. Half of Pit	95.9	24.4	
SG-10	N.W. Side of N. Half of Pit	99.8	19.4	
SG-11	E. Side of N. Half of Pit	99.5	18.9	

Control Density: 104.2
ASTM: D 698

Optimum Moisture: 21.4%

Required Compaction: 95%

Lab No.: 03 1350-1352

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