AP - 65

STAGE 1 & 2 REPORTS

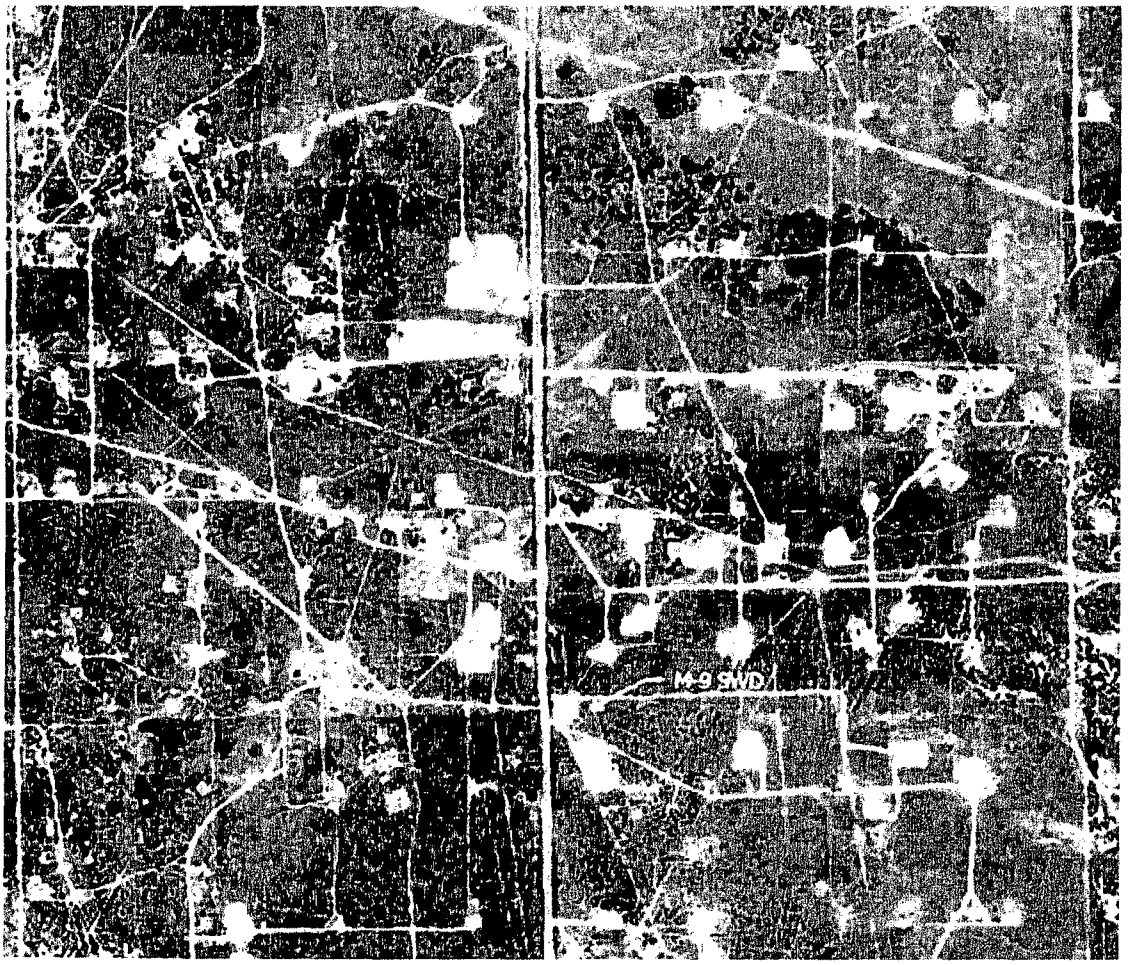
DATE:

March 28, 2005

INVESTIGATION AND CHARACTERIZATION PLAN
EME M-9 SWD Site
T20S, R37E, Section 9, Unit Letter M
Lea County, New Mexico

MARCH 28, 2005

Prepared For:
RICE Operating Company
122 West Taylor
Hobbs, New Mexico 88240



Prepared By:

TRIDENT ENVIRONMENTAL

P O Box 7624
Midland, Texas 79708

CERTIFIED MAIL
RETURN RECIEPT NO. 7099 3400 0017 1737 2480

March 28, 2005

Mr. Wayne Price
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

RE: **INVESTIGATION AND CHARACTERIZATION PLAN**
EME M-9 SWD SITE
T20S-R37E-Section 9, Unit Letter M
NMOCD CASE # 1R0331

Mr. Price:

RICE Operating Company (ROC) has retained Trident Environmental to address potential environmental concerns at the above-referenced site. ROC is the service provider (operator) for the EME SWD System and has no ownership of any portion of the pipeline, well, or facility. The System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Environmental projects of this magnitude require System Partner AFE approval and work begins as funds are received. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission is requested. The 2004 Annual Groundwater Monitoring Report for the M-9 SWD Site has been submitted as a separate document.

BACKGROUND

The legal description of the M-9 SWD facility is township 20 south, range 37 east, section 9, unit letter M. The M-9 SWD site is located along Highway 8 approximately 3 miles south of Monument, NM as shown in Figure 1. Land in the site area is primarily utilized for oil and gas production and cattle ranching. Area oil and gas production is operated by Pure Oil Company, Chevron USA Inc., and XTO Energy. The surface landowner is S&W Cattle Company.

PREVIOUS WORK

Initial soil sampling activities for delineation of the M-9 SWD site began on September 17, 2001, prior to the removal of the redwood tanks. Sampling results indicated TPH and chloride impacts approaching the depth to groundwater at about 18 feet below ground surface (bgs). A monitoring well (MW-1) was installed on April 2, 2002.

On June 19, 2002 began excavation operations and removal of the redwood tanks in accordance with the Generic Closure Plan for Existing Pits and Below-Grade Redwood Tanks (February 23, 2000). Five junction boxes were also removed as they were within the area excavated at the facility. Excavation of approximately 8,000 cubic yards of TPH impacted soil was completed to a depth of 20 feet bgs and was land farmed on site. Due to the horizontal extent of the excavation monitoring well MW-1 had to be

removed. Clean backfill was placed in the deep excavation from 20 feet to 16 feet bgs. A 12-inch compacted clay liner was then installed prior to backfilling with the remediated soil in 3-foot lifts. The remaining remediated soil was placed on the surface and contoured to the surrounding terrain. Backfilling was completed on September 9, 2002. Three new fiberglass tanks were installed along the south end of the fenced facility. The Redwood Tank Closure Report detailing all of the above-referenced work was submitted to the NMOCD on November 4, 2002.

On October 10, 2002, a replacement monitoring well (MW-1A) was installed immediately adjacent to the southeast corner of the excavated area. Subsequent sampling of MW-1A confirmed that groundwater was impacted with chloride and TDS levels slightly above WQCC standards, however BTEX concentrations were well below the WQCC standards.

A work plan addressing further actions was submitted by Trident Environmental on June 20, 2003 and was approved by the NMOCD on June 27, 2003. In accordance with the work plan, monitoring wells MW-2 and MW-3 were installed approximately 120 feet down gradient (southeast) and approximately 130 feet upgradient (northwest) of MW-1A, respectively, on August 20, 2003. On February 17, 2004, monitoring well MW-4 was installed approximately 150 feet southeast of MW-2 for further downgradient delineation. Quarterly monitoring of the groundwater has been conducted since the installation of all monitoring wells. The most recent analytical results and groundwater elevations are depicted in Figure 2. A summary of past laboratory analytical results and groundwater elevations are listed in Table 1 and depicted graphically in Figures 2 through 6.

The source of this impact is historical. There is no longer a threat of compounded impact from the vadose zone at this site because of the excavation, lining and backfilling of the former source area below the redwood tanks and junction boxes. Groundwater impairment is only slightly above WQCC standards and is very near background levels for the constituents of concern. However, continued groundwater monitoring and further delineation of the chloride/TDS plume are needed to fully assess the extent of groundwater impact.

RECOMMENDATION FOR FURTHER ACTIONS

As discussed above, existing site data and analysis document impairment of ground water quality. The following tasks are designed to assist ROC in selecting an appropriate groundwater remedy.

Task 1 *Collect Regional Hydrogeologic Data*

Since May 2004 the groundwater gradient direction has shifted from southeast to southwest. Due to this variation in groundwater gradient direction ROC has determined that an expanded data search for existing water wells in the area must be made to define the regional gradient pattern and whether it is affected by groundwater withdrawal from water supply wells in the area. Also, this data search is necessary to establish background water quality conditions, particularly chloride and TDS concentrations. A site visit and well access is necessary to verify the existence of the area water wells and to acquire current data (depth to groundwater, chloride and TDS concentrations) from them. A more regional groundwater gradient map and chloride/TDS concentration map will be constructed after compiling the necessary data.

Task 2 *Evaluate Concentrations of Constituents of Concern in Ground Water*

To address your request for further delineation of the chloride/TDS plume an additional monitoring well will be placed southwest of the facility in the current downgradient direction. Another monitoring well will be installed southeast of MW-4 for more complete delineation in that area. The exact placement of these wells

will be determined pending the results of task 1 and performed such that non-ROC operated facilities are not targeted. During drilling operations, soil samples will be collected periodically (five feet intervals) and field-tested for chloride content using the titration method. The monitoring well will be completed as described in the attached well construction diagram. Sampling procedures will be conducted in accordance with the procedures explained in QP-02, QP-03, QP-04, QP-05, and QP-07 (attached).

The information gathered from tasks 1 and 2 will be evaluated and utilized to design a groundwater remedy if needed. The ground water remedy that offers the greatest environmental benefit while causing the least environmental impairment will be selected. Such recommendations and findings will be presented to NMOCD in a subsequent Corrective Action Plan (CAP). When evaluating any proposed remedy or investigative work, ROC will confirm that there is a reasonable relationship between the benefits created by the proposed remedy or assessment and the economic and social costs.

We appreciate the opportunity to work with you on this project. Please feel free to call me at 432-638-3106 or Kristin Farris Pope at 505-393-9174, if you have any questions.

Sincerely,

Gilbert J. Van Deventer

Gilbert J. Van Deventer, REM, PG, NMCS
Project Manager

cc: CDH, KFP, file

enclosures: site location map, site map, tables, graphs, and photodocumentation

MAPS

Figure 1: Site Location Map
Figure 2: Site Map

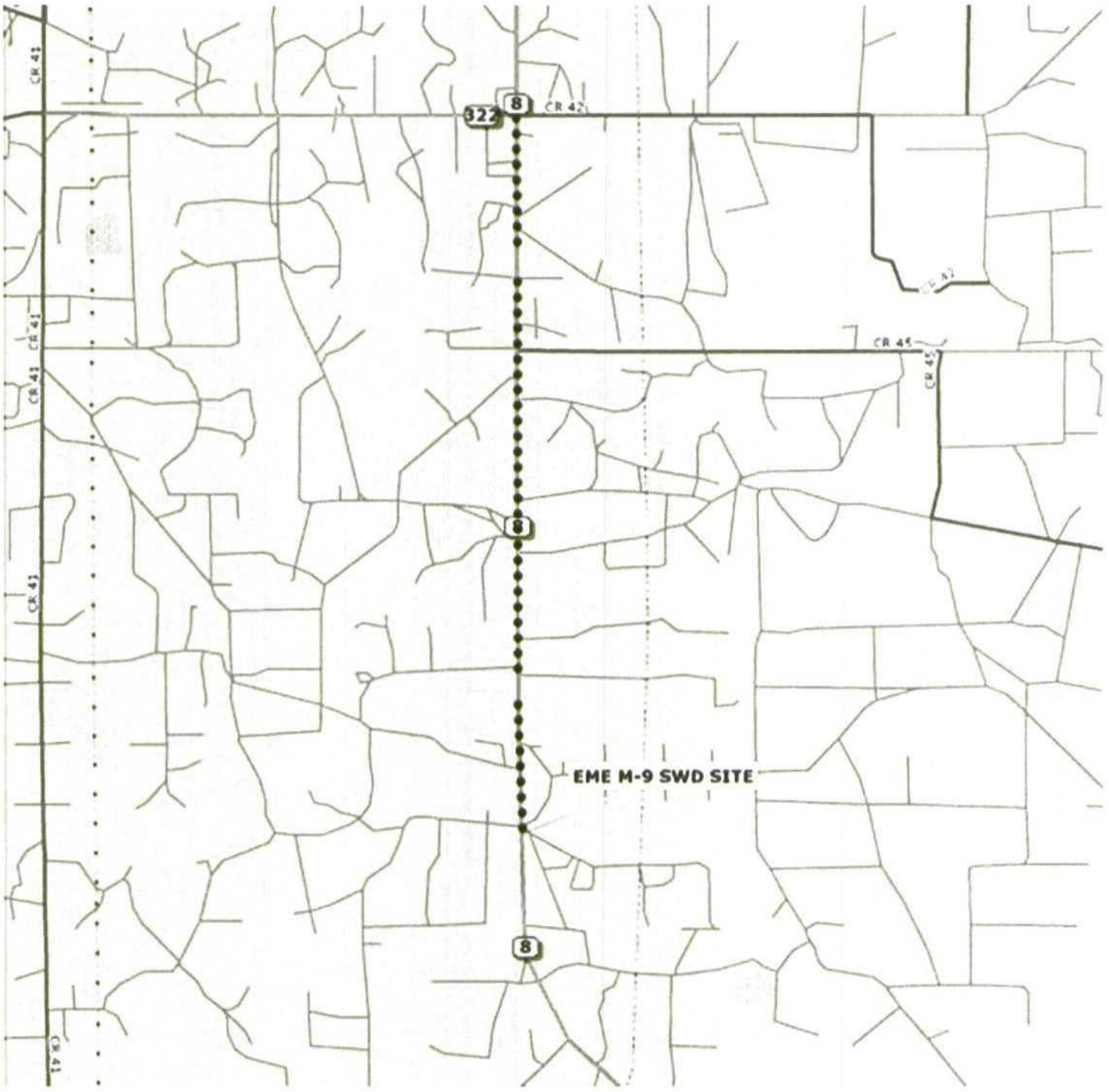
TABLE

Table 1: Summary of Groundwater Sampling Results

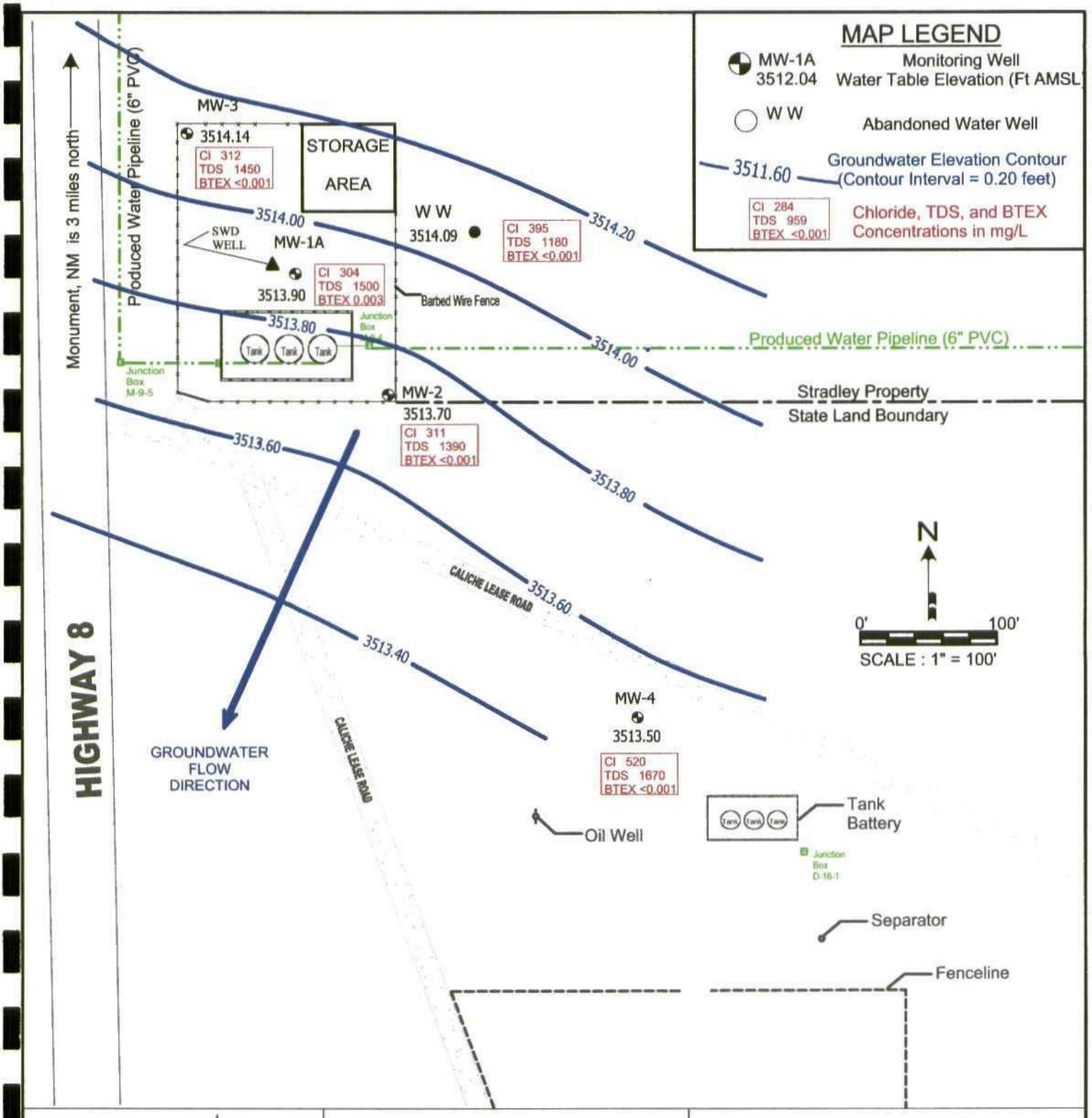
GRAPHS

Figure 3: Chloride, TDS, and Groundwater Elevations Versus Time (MW-1A)
Figure 4: Chloride, TDS, and Groundwater Elevations Versus Time (MW-2)
Figure 5: Chloride, TDS, and Groundwater Elevations Versus Time (MW-3)
Figure 6: Chloride, TDS, and Groundwater Elevations Versus Time (MW-4)
Figure 7: Chloride, TDS, and Groundwater Elevations Versus Time (WW)

Figure 1
Site Location Map
EME M-9 SWD Site
T20S-R37E-Sec 9M



Directions: From the junction of Hwy 322 and Hwy 8 in Monument proceed 3 miles south on Hwy 8. Turn left onto caliche lease road and proceed east to gate.



TRIDENT ENVIRONMENTAL

Client: Rice Operating Company	FIGURE 2
Sampling Date: February 8, 2005	EME SYSTEM M-9 SWD STATION
Author: GJV	
File: Projects/Rice/EME/M-9/020805M9	

Table 1
Summary of Groundwater Sampling Results
EME M-9 SWD Site

Monitoring Well	Sample Date	Chloride (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-1	04/08/02	**348**	**1512**	< 0.002	< 0.002	< 0.002	< 0.006	---	---
	05/13/02	**354**	**1540**	< 0.001	< 0.001	< 0.001	< 0.001	21.02	---
	08/20/02	**376**	**1517**	< 0.002	< 0.002	< 0.002	< 0.006	22.45	---
MW-1A	10/28/02	**372**	**1470**	< 0.001	< 0.001	< 0.001	< 0.001	19.10	3510.70
	02/28/03	**372**	**1500**	0.002	0.002	0.002	0.003	18.48	3511.32
	05/16/03	**390**	**1470**	0.001	< 0.001	< 0.001	0.001	19.00	3510.80
	08/22/03	**372**	**1470**	0.002	< 0.001	< 0.001	< 0.001	19.38	3510.42
	10/30/03	**346**	**1530**	< 0.001	< 0.001	< 0.001	< 0.001	19.57	3510.23
	02/20/04	**337**	**1390**	0.001	< 0.001	< 0.001	< 0.001	19.41	3510.39
	05/05/04	**337**	**1400**	0.001	< 0.001	< 0.001	< 0.001	17.76	3512.04
	08/11/04	**390**	**1690**	0.003	< 0.001	< 0.001	< 0.001	18.27	3511.53
	11/10/04	**390**	**1740**	0.003	< 0.001	< 0.001	< 0.001	17.23	3512.57
	02/08/05	**304**	**1500**	0.003	< 0.001	< 0.001	0.001	15.90	3513.90
MW-2	08/22/03	**603**	**2060**	< 0.001	< 0.001	< 0.001	< 0.001	21.45	3510.05
	10/30/03	**709**	**2300**	< 0.001	< 0.001	< 0.001	< 0.001	21.61	3509.89
	02/20/04	**478**	**1800**	< 0.001	< 0.001	< 0.001	< 0.001	21.44	3510.06
	05/05/04	**328**	**1460**	< 0.001	< 0.001	< 0.001	< 0.001	19.67	3511.83
	08/11/04	**461**	**1770**	< 0.001	< 0.001	< 0.001	< 0.001	20.26	3511.24
	11/10/04	**346**	**1610**	< 0.001	< 0.001	< 0.001	< 0.001	19.13	3512.37
	02/08/05	**311**	**1390**	< 0.001	< 0.001	< 0.001	< 0.001	17.80	3513.70
MW-3	08/22/03	**319**	**1590**	< 0.001	< 0.001	< 0.001	< 0.001	21.68	3510.72
	10/30/03	**328**	**1740**	< 0.001	< 0.001	< 0.001	< 0.001	21.86	3510.54
	02/20/04	**337**	**1550**	< 0.001	< 0.001	< 0.001	< 0.001	21.70	3510.70
	05/05/04	**328**	**1530**	< 0.001	< 0.001	< 0.001	< 0.001	20.10	3512.30
	08/11/04	**337**	**1560**	< 0.001	< 0.001	< 0.001	< 0.001	20.62	3511.78
	11/10/04	**337**	**1600**	< 0.001	< 0.001	< 0.001	< 0.001	19.61	3512.79
	02/08/05	**312**	**1450**	< 0.001	< 0.001	< 0.001	< 0.001	18.26	3514.14
MW-4	02/20/04	**585**	**1820**	< 0.001	< 0.001	< 0.001	< 0.001	22.61	3509.79
	05/05/04	**549**	**1760**	< 0.001	< 0.001	< 0.001	< 0.001	20.77	3511.63
	08/11/04	**567**	**1770**	< 0.001	< 0.001	< 0.001	< 0.001	21.28	3511.12
	11/10/04	**514**	**1790**	< 0.001	< 0.001	< 0.001	< 0.001	20.21	3512.19
	02/08/05	**520**	**1670**	< 0.001	< 0.001	< 0.001	< 0.001	18.90	3513.50
WW	08/22/03	---	---	---	---	---	---	21.09	3509.41
	10/30/03	**284**	**1150**	< 0.001	< 0.001	< 0.001	0.002	20.25	3510.25
	02/20/04	**292**	**1100**	< 0.001	< 0.001	< 0.001	0.002	20.07	3510.43
	05/14/04	**266**	**1040**	< 0.001	< 0.001	< 0.001	< 0.001	18.29	3512.21
	08/11/04	**266**	**1810**	< 0.001	< 0.001	< 0.001	< 0.001	18.92	3511.58
	11/10/04	**284**	**959**	< 0.001	< 0.001	< 0.001	< 0.001	17.82	3512.68
	02/08/05	**395**	**1180**	< 0.001	< 0.001	< 0.001	< 0.001	16.41	3514.09
WQCC Standards		250	1000	0.01	0.75	0.75	0.62		

Total Dissolved Soilds (TDS), chloride, and BTEX concentrations listed in milligrams per liter (mg/L)
Analyses performed by Cardinal Labs, Hobbs, NM (1995-1998) and Environmental Lab of Texas, Odessa, TX (1999-2003).
Values in boldface type indicate concentrations exceed New Mexico Water Quality Commission (WQCC) standards.
AMSL - Above Mean Sea Level; BTOC - Below Top of Casing
Groundwater flow direction is to the southeast with a gradient of approx. 0.003 ft/ft.
Elevations and state plane coordinates surveyed by Basin Surveys, Hobbs, NM.

Figure 3
Chloride, TDS, and Groundwater Elevation Values Versus Time (MW-1A)

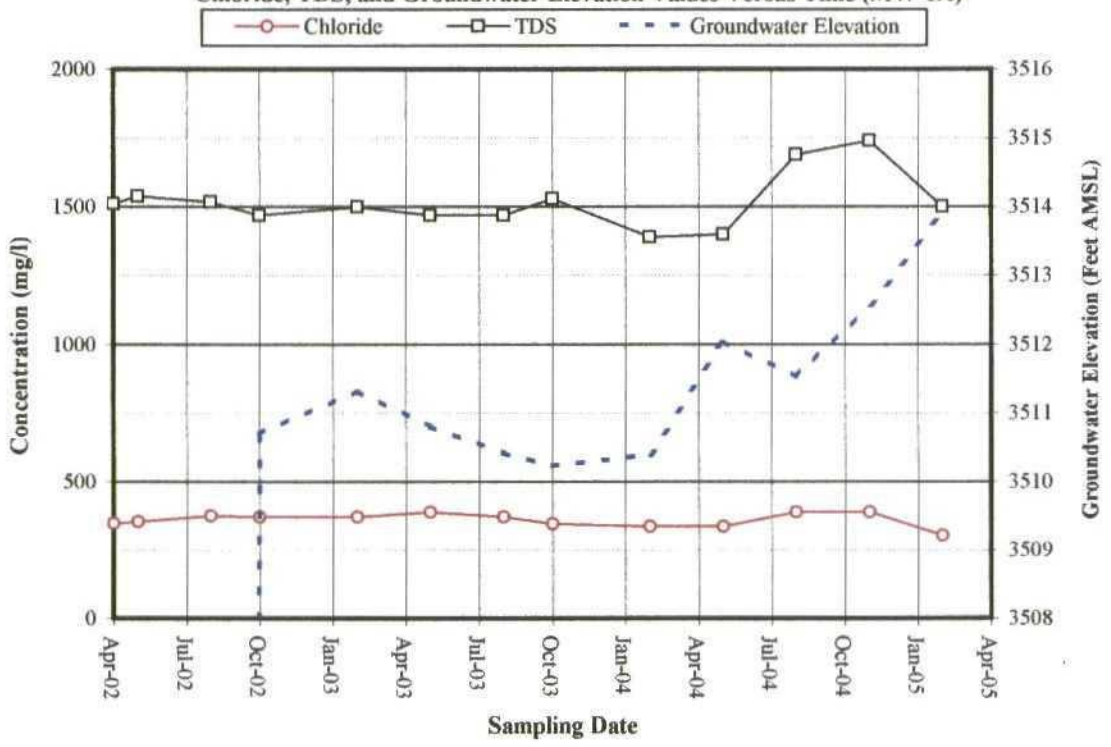


Figure 4
Chloride, TDS, and Groundwater Elevation Values Versus Time (MW-2)

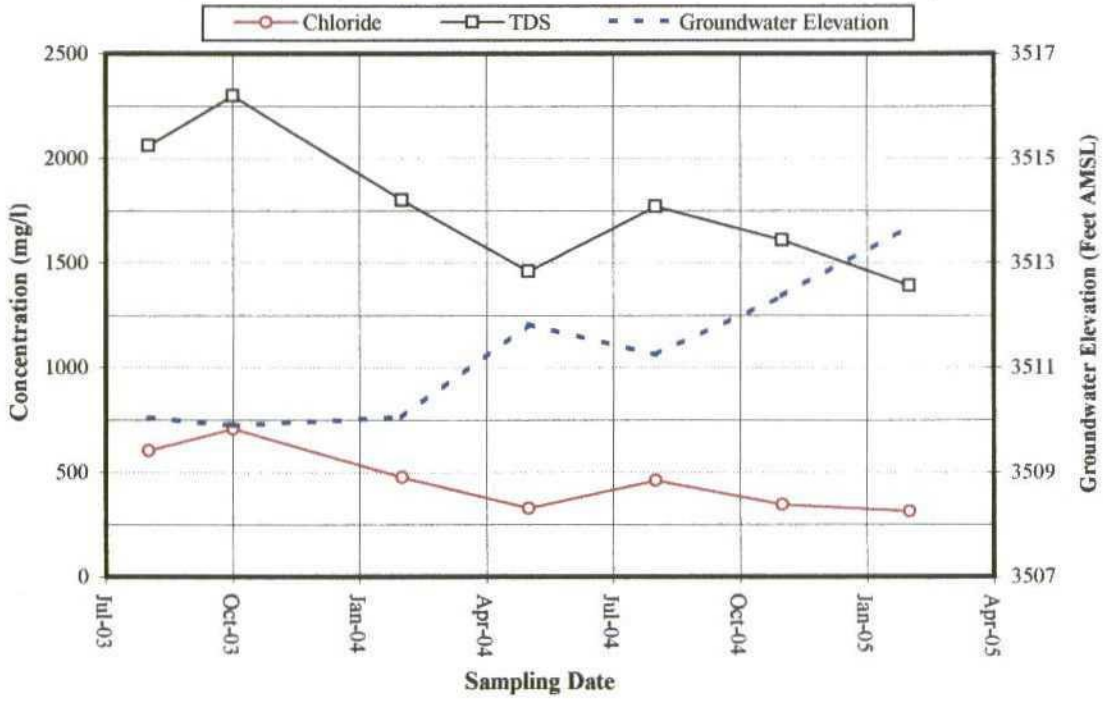


Figure 5
Chloride, TDS, and Groundwater Elevation Values Versus Time (MW-3)

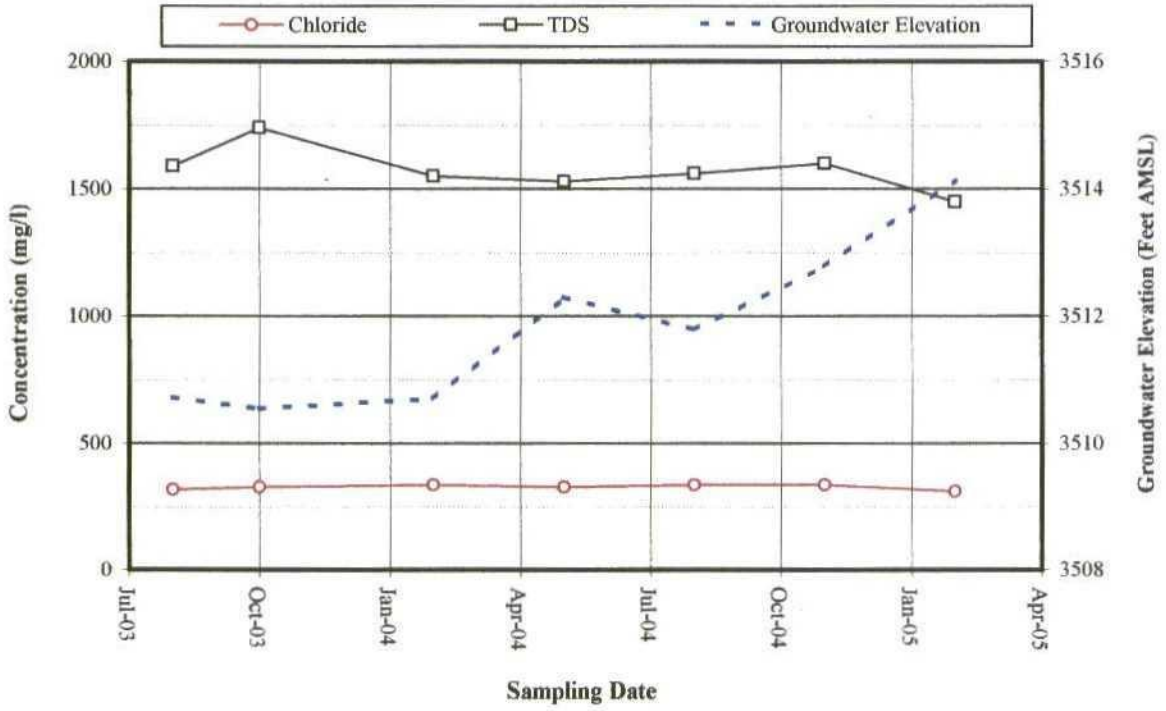


Figure 6
Chloride, TDS, and Groundwater Elevation Values Versus Time (MW-4)

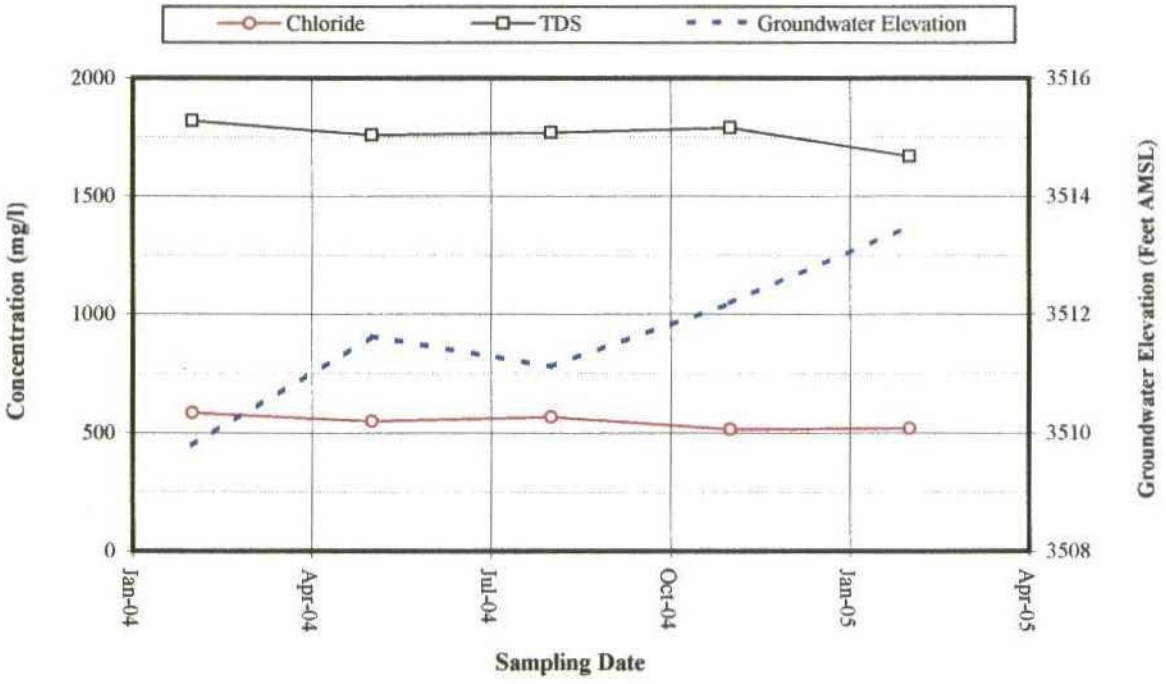
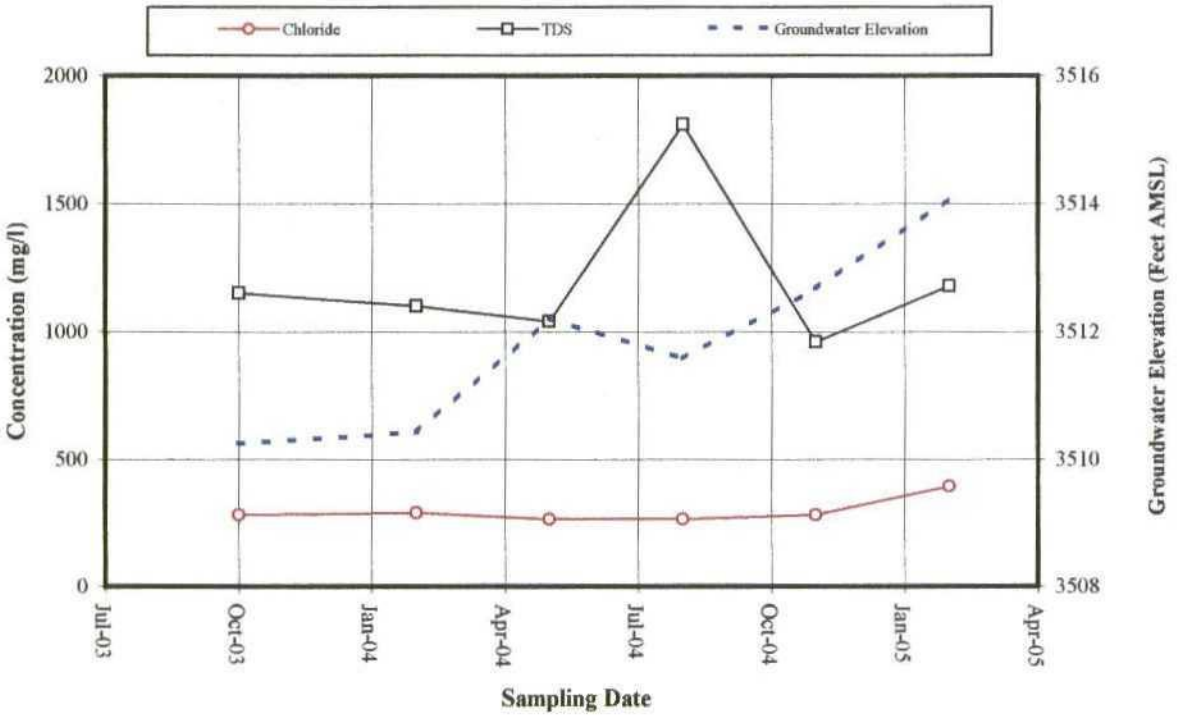


Figure 7
Chloride, TDS, and Groundwater Elevation Values Versus Time (WW)



View facing south showing EME M-9 Saltwater Disposal Facility

View facing northwest showing installation of
monitoring well MW-4 southeast of EME M-9 SWD facility.

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: EME System M-9 SWD Site

Project Number: None Given

Location: T2OS, R37E, Sec 9, Unit Letter M

Lab Order Number: 5B09004

Report Date: 02/18/05

Rice Operating Co.	Project: EME System M-9 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/18/05 17:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	5B09004-01	Water	02/08/05 15:12	02/09/05 07:00
MW-2	5B09004-02	Water	02/08/05 14:20	02/09/05 07:00
MW-3	5B09004-03	Water	02/08/05 13:53	02/09/05 07:00
MW-4	5B09004-04	Water	02/08/05 15:53	02/09/05 07:00
WW	5B09004-05	Water	02/08/05 13:15	02/09/05 07:00

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME System M-9 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/18/05 17:58

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (5B09004-01) Water									
Benzene	**0.00279**	0.00100	mg/L	1	EB51807	02/14/05	02/15/05	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	**0.00115**	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*80.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.5 %*	*80-120*		"	"	"	"	
MW-2 (5B09004-02) Water									
Benzene	ND	0.00100	mg/L	1	EB51807	02/14/05	02/15/05	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		*103 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*112 %*	*80-120*		"	"	"	"	
MW-3 (5B09004-03) Water									
Benzene	ND	0.00100	mg/L	1	EB51807	02/14/05	02/15/05	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		*105 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*80-120*		"	"	"	"	
MW-4 (5B09004-04) Water									
Benzene	ND	0.00100	mg/L	1	EB51807	02/14/05	02/15/05	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		*82.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.0 %*	*80-120*		"	"	"	"	

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Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WW (5B09004-05) Water									
Benzene	ND	0.00100	mg/L	1	EB51807	02/14/05	02/15/05	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		*108 %*		*80-120*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*112 %*		*80-120*		"	"	"	

Rice Operating Co.	Project: EME System M-9 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/18/05 17:58

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (5B09004-01) Water									
Total Alkalinity	**340**	2.00	mg/L	1	EB51404	02/15/05	02/15/05	EPA 310.2M	
Chloride	**304**	10.0	"	20	EB51713	02/10/05	02/10/05	EPA 300.0	
Total Dissolved Solids	**1500**	5.00	"	1	EB51004	02/09/05	02/10/05	EPA 160.1	
Sulfate	**356**	10.0	"	20	EB51713	02/10/05	02/10/05	EPA 300.0	
MW-2 (5B09004-02) Water									
Total Alkalinity	**290**	2.00	mg/L	1	EB51404	02/15/05	02/15/05	EPA 310.2M	
Chloride	**311**	10.0	"	20	EB51713	02/10/05	02/10/05	EPA 300.0	
Total Dissolved Solids	**1390**	5.00	"	1	EB51004	02/09/05	02/10/05	EPA 160.1	
Sulfate	**308**	10.0	"	20	EB51713	02/10/05	02/10/05	EPA 300.0	
MW-3 (5B09004-03) Water									
Total Alkalinity	**226**	2.00	mg/L	1	EB51404	02/15/05	02/15/05	EPA 310.2M	
Chloride	**312**	10.0	"	20	EB51713	02/10/05	02/10/05	EPA 300.0	
Total Dissolved Solids	**1450**	5.00	"	1	EB51004	02/09/05	02/10/05	EPA 160.1	
Sulfate	**407**	10.0	"	20	EB51713	02/10/05	02/10/05	EPA 300.0	
MW-4 (5B09004-04) Water									
Total Alkalinity	**250**	2.00	mg/L	1	EB51404	02/15/05	02/15/05	EPA 310.2M	
Chloride	**520**	12.5	"	25	EB51713	02/10/05	02/10/05	EPA 300.0	
Total Dissolved Solids	**1670**	5.00	"	1	EB51004	02/09/05	02/10/05	EPA 160.1	
Sulfate	**311**	12.5	"	25	EB51713	02/10/05	02/10/05	EPA 300.0	
WW (5B09004-05) Water									
Total Alkalinity	**264**	2.00	mg/L	1	EB51404	02/15/05	02/15/05	EPA 310.2M	
Chloride	**395**	10.0	"	20	EB51713	02/10/05	02/10/05	EPA 300.0	
Total Dissolved Solids	**1180**	5.00	"	1	EB51004	02/09/05	02/10/05	EPA 160.1	
Sulfate	**155**	10.0	"	20	EB51713	02/10/05	02/10/05	EPA 300.0	

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Rice Operating Co.	Project: EME System M-9 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/18/05 17:58

Total Metals by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (5B09004-01) Water									
Calcium	**135**	1.00	mg/L	100	EB51702	02/14/05	02/16/05	EPA 6010B	
Magnesium	**80.5**	0.0500	"	50	"	"	"	"	
Potassium	**10.8**	0.500	"	10	"	"	"	"	
Sodium	**239**	1.00	"	100	"	"	"	"	
MW-2 (5B09004-02) Water									
Calcium	**105**	1.00	mg/L	100	EB51702	02/14/05	02/16/05	EPA 6010B	
Magnesium	**64.4**	0.0500	"	50	"	"	"	"	
Potassium	**11.4**	0.250	"	5	"	"	"	"	
Sodium	**256**	1.00	"	100	"	"	"	"	
MW-3 (5B09004-03) Water									
Calcium	**175**	1.00	mg/L	100	EB51702	02/14/05	02/16/05	EPA 6010B	
Magnesium	**73.2**	0.0500	"	50	"	"	"	"	
Potassium	**8.65**	0.250	"	5	"	"	"	"	
Sodium	**276**	1.00	"	100	"	"	"	"	
MW-4 (5B09004-04) Water									
Calcium	**131**	1.00	mg/L	100	EB51702	02/14/05	02/16/05	EPA 6010B	
Magnesium	**76.1**	0.0500	"	50	"	"	"	"	
Potassium	**11.3**	0.250	"	5	"	"	"	"	
Sodium	**327**	1.00	"	100	"	"	"	"	
WW (5B09004-05) Water									
Calcium	**114**	0.500	mg/L	50	EB51702	02/14/05	02/16/05	EPA 6010B	
Magnesium	**60.6**	0.0500	"	"	"	"	"	"	
Potassium	**9.08**	0.250	"	5	"	"	"	"	
Sodium	**201**	1.00	"	100	"	"	"	"	

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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 EB51807 - EPA 5030C (GC)										
Blank (EB51807-BLK1)				Prepared & Analyzed: 02/14/05						
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	*16.5*		*ug/l*	*20.0*		*82.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*17.4*		*"*	*20.0*		*87.0*	*80-120*			
LCS (EB51807-BS1)				Prepared & Analyzed: 02/14/05						
Benzene	105		ug/l	100		105	80-120			
Toluene	105		"	100		105	80-120			
Ethylbenzene	95.9		"	100		95.9	80-120			
Xylene (p/m)	196		"	200		98.0	80-120			
Xylene (o)	95.7		"	100		95.7	80-120			
Surrogate: a,a,a-Trifluorotoluene	*16.5*		*"*	*20.0*		*82.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*16.8*		*"*	*20.0*		*84.0*	*80-120*			
LCS Dup (EB51807-BSD1)				Prepared & Analyzed: 02/14/05						
Benzene	113		ug/l	100		113	80-120	7.34	20	
Toluene	112		"	100		112	80-120	6.45	20	
Ethylbenzene	107		"	100		107	80-120	10.9	20	
Xylene (p/m)	224		"	200		112	80-120	13.3	20	
Xylene (o)	111		"	100		111	80-120	14.8	20	
Surrogate: a,a,a-Trifluorotoluene	*18.6*		*"*	*20.0*		*93.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*20.2*		*"*	*20.0*		*101*	*80-120*			
Calibration Check (EB51807-CCV1)				Prepared: 02/14/05 Analyzed: 02/16/05						
Benzene	97.5		ug/l	100		97.5	80-120			
Toluene	104		"	100		104	80-120			
Ethylbenzene	93.1		"	100		93.1	80-120			
Xylene (p/m)	194		"	200		97.0	80-120			
Xylene (o)	97.9		"	100		97.9	80-120			
Surrogate: a,a,a-Trifluorotoluene	*16.7*		*"*	*20.0*		*83.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*17.8*		*"*	*20.0*		*89.0*	*80-120*			

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 EB51807 - EPA 5030C (GC)										
Matrix Spike (EB51807-MS1)	**Source: 5B09008-01**			Prepared: 02/14/05 Analyzed: 02/18/05						
Benzene	93.3		ug/l	100	ND	93.3	80-120			
Toluene	101		"	100	ND	101	80-120			
Ethylbenzene	102		"	100	ND	102	80-120			
Xylene (p/m)	206		"	200	ND	103	80-120			
Xylene (o)	97.3		"	100	ND	97.3	80-120			
Surrogate: a,a,a-Trifluorotoluene	*23.3*		"	*20.0*		*116*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*20.4*		"	*20.0*		*102*	*80-120*			

Rice Operating Co.	Project: EME System M-9 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/18/05 17:58

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 EB51004 - General Preparation (WetChem)										
Blank (EB51004-BLK1)				Prepared: 02/09/05 Analyzed: 02/10/05						
Total Dissolved Solids	ND	5.00	mg/L							
Duplicate (EB51004-DUP1)	**Source: 5B09003-01**			Prepared: 02/09/05 Analyzed: 02/10/05						
Total Dissolved Solids	16200	5.00	mg/L		14600			10.4	20	
Batch EB51404 - General Preparation (WetChem)										
Blank (EB51404-BLK1)				Prepared & Analyzed: 02/15/05						
Total Alkalinity	ND	2.00	mg/L							
Duplicate (EB51404-DUP1)	**Source: 5B09003-01**			Prepared & Analyzed: 02/15/05						
Total Alkalinity	395	2.00	mg/L		396			0.253	20	
Reference (EB51404-SRM1)				Prepared & Analyzed: 02/15/05						
Carbonate Alkalinity	0.0510		mg/L	0.0500		102	80-120			
Batch EB51713 - General Preparation (WetChem)										
Blank (EB51713-BLK1)				Prepared & Analyzed: 02/10/05						
Sulfate	ND	0.500	mg/L							
Chloride	ND	0.500	"							
LCS (EB51713-BS1)				Prepared & Analyzed: 02/10/05						
Sulfate	9.66		mg/L	10.0		96.6	80-120			
Chloride	9.56		"	10.0		95.6	80-120			

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Rice Operating Co.	Project: EME System M-9 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/18/05 17:58

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 EB51713 - General Preparation (WetChem)										
LCS Dup (EB51713-BSD1)				Prepared & Analyzed: 02/10/05						
Sulfate	9.64		mg/L	10.0		96.4	80-120	0.207	20	
Chloride	9.51		"	10.0		95.1	80-120	0.524	20	
Calibration Check (EB51713-CCV1)				Prepared & Analyzed: 02/10/05						
Chloride	9.73		mg/L	10.0		97.3	80-120			
Sulfate	9.88		"	10.0		98.8	80-120			
Duplicate (EB51713-DUP1)	**Source: 5B09004-01**			Prepared & Analyzed: 02/10/05						
Chloride	304	10.0	mg/L		304			0.00	20	
Sulfate	357	10.0	"		356			0.281	20	

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Rice Operating Co.	Project: EME System M-9 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/18/05 17:58

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 EB51702 - 6010B/No Digestion										
Blank (EB51702-BLK1)				Prepared: 02/14/05 Analyzed: 02/16/05						
Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							
Calibration Check (EB51702-CCV1)				Prepared: 02/14/05 Analyzed: 02/16/05						
Calcium	2.22		mg/L	2.00		111	85-115			
Magnesium	2.08		"	2.00		104	85-115			
Potassium	1.75		"	2.00		87.5	85-115			
Sodium	1.94		"	2.00		97.0	85-115			
Duplicate (EB51702-DUP1)	**Source: 5B09003-01**			Prepared: 02/14/05 Analyzed: 02/16/05						
Calcium	905	1.00	mg/L		848			6.50	20	
Magnesium	254	0.100	"		239			6.09	20	
Potassium	88.3	2.50	"		90.7			2.68	20	
Sodium	5810	10.0	"		4840			18.2	20	

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Rice Operating Co.	Project: EME System M-9 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/18/05 17:58

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: 2/18/2005

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Kristin Farris
Company Name Rice Operating Company
Company Address: 122 West Taylor
City/State/Zip: Hobbs, New Mexico 88240
Telephone No: 505-393-9174 **Fax No:** 505-397-1471
Sampler Signature:

Project Name: EME System M-9 SWD Site
Project #:
Project Location: T20S, R37E, Sec 9, Unit Letter M
COC #: V117M9-0205

LAB # (lab use only) 580004	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl (BTEX only)	NaOH	H2SO4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)	Analyze For: TPH: 418.1 8015M 1005 100	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Total Dissolved Solids			RUSH TAT (Pre-Sched)	Standard TAT
01	MW-1	2-8-05	1512	3	✓		✓					✓					✓	✓					✓			✓				✓
02	MW-2	2-8-05	1420	3	✓		✓					✓					✓	✓					✓			✓				✓
03	MW-3	2-8-05	1353	3	✓		✓					✓					✓	✓					✓			✓				✓
04	MW-4	2-8-05	1553	3	✓		✓					✓					✓	✓					✓			✓				✓
05	WW	2-8-05	1315	3	✓		✓					✓					✓	✓					✓			✓				✓

Special Instructions: Please email results to both gil@trident-environmental.com and to enviro@leaco.net

Sample Containers Intact? (Y) N
Temperature Upon Receipt: -1.0°C
Laboratory Comments:
1-L HDPE
2-40mL glass w/HCl

Relinquished by:	Date	Time	Received by:	Date	Time
	2/8/05	8:00p			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
Drop Box	2-9-5	0700	Jesse McMurray	2-9-5	0700

Seal on Black Box

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

Client: Rice Operating Co.

Date/Time: 02-09-05 @ 0700

Order #: 5B09004

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	(Yes)	No	-1.0 C
Shipping container/cooler in good condition?	(Yes)	No	
Custody Seals intact on shipping container/cooler?	(Yes)	No	Not present → on Black Box
Custody Seals intact on sample bottles?	Yes	No	(Not present)
Chain of custody present?	Yes	(No)	→ not in dropbox Client dropped off later
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	
VOC samples have zero headspace?	(Yes)	No	Not Applicable

Other observations:

Variance Documentation:

Contact Person: - Gil VanDeventer Date/Time: 02-09-05 @ 0800 Contacted by: Jeanne McMahan

Regarding:

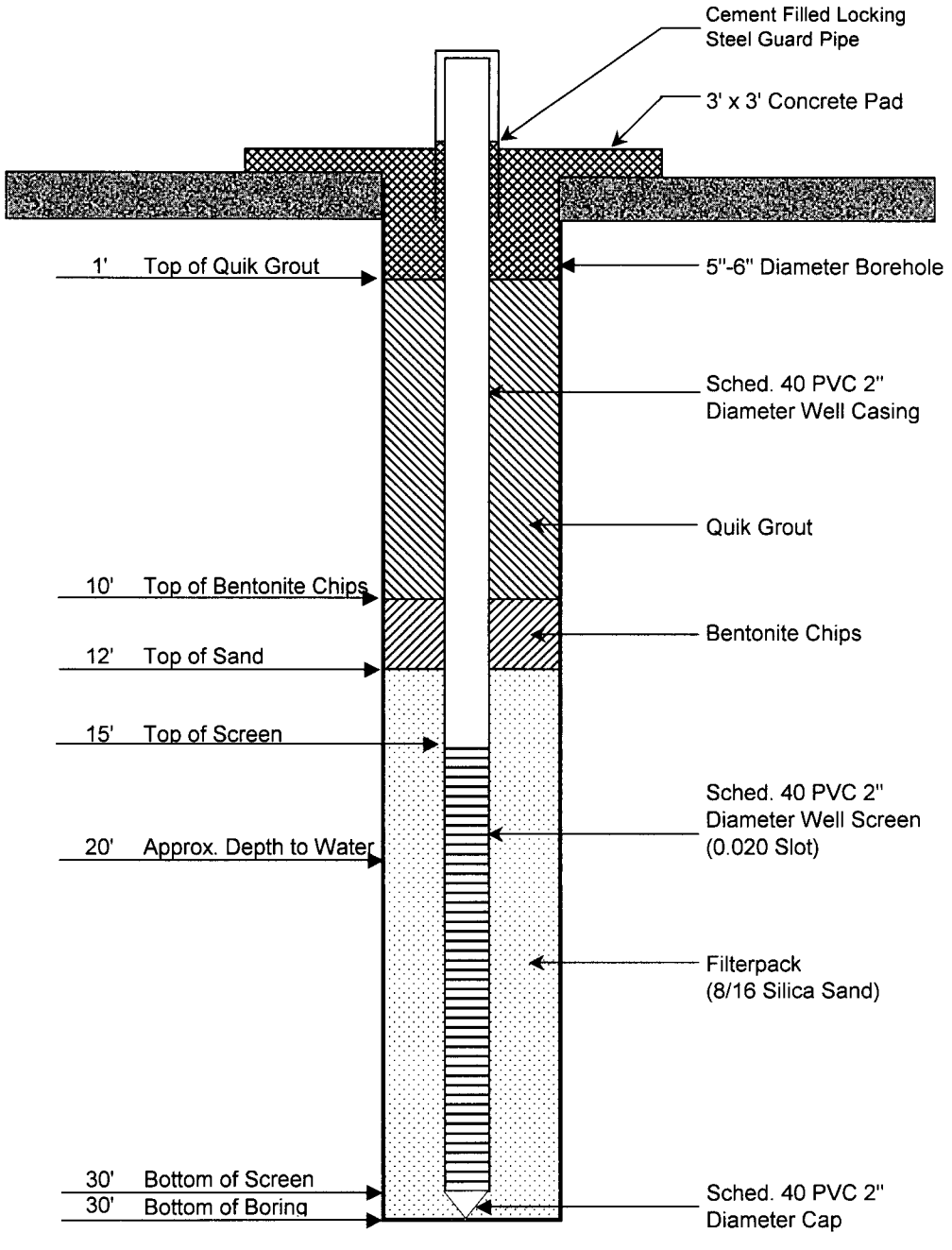
missing COC

Corrective Action Taken:

Client will bring COC by later this morning

MONITORING WELL CONSTRUCTION DIAGRAM

(Not to Scale)



TRIDENT ENVIRONMENTAL	Client:	Rice Operating Company
	Site Name:	EME M-9 SWD Site
	Completion Date:	N/A
	On Site Geologist:	N/A

Monitoring Well Construction Diagram

RICE *Operating Company*
Quality Procedures

QP-02: Procedure for Obtaining Soil Samples for Transportation to a Lab

QP-03: Sampling and Testing Protocol for Chloride Titration

QP-04: Development of Cased Water-Monitoring Wells

QP-05: Procedure for Obtaining Water Samples (Cased Wells)

QP-07: Sampling and Testing Protocol for VOC in Soil

Rice Operating Company

Quality Procedure

Procedure for Obtaining
Soil Samples for Transportation to a Laboratory

1.0 Purpose

This procedure outlines the methods to be employed when obtaining soil samples to be taken to a laboratory for analysis.

2.0 Scope

This procedure is to be used when collecting soil samples intended for ultimate transfer to a testing laboratory.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the soil. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 If collecting TPH, BTEX, RCRA 8 metals, cation /anions or O&G, the sample jar may be a clear 4 oz. container with Teflon lid. If collecting PAH's, use an amber 4 oz. container.

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the number, location and designation of each planned sample and the individual tests to be performed on the sample. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label.) Affix the labels to the jars.

5.0 Sampling Procedure

5.1. Do not touch the soil with your bare hands. Use new latex gloves with each sample to help minimize any cross-contamination.

5.2. Go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to obtain the soil.

5.3. Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label.

5.4. Place the sample directly on ice for transport to the laboratory if required.

5.5. Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

6.0 Documentation

6.1 The testing laboratory shall provide the following minimum information:

a. Project and sample name.
b. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
c. Results of the requested analyses
d. Test Methods employed
e. Quality Control methods and results

Rice Operating Company

QUALITY PROCEDURE

Sampling and Testing Protocol
Chloride Titration Using .282 Normal
Silver Nitrate Solution

1.0 Purpose

This procedure is to be used to determine the concentration of chloride in soil.

2.0 Scope

This procedure is to be used as the standard field measurement for soil chloride concentrations.

3.0 Sample Collection and Preparation

3.1 Collect at least 80 grams of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample for soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).

3.2 The soil sample(s) shall be immediately inserted into a one-quart or larger polyethylene freezer bag. Care should be taken to insure that no cross-contamination occurs between the soil sample and the collection tools or sample processing equipment.

3.3 The sealed sample bag should be massaged to break up any clods.

4.0 Sample Preparation

4.1 Tare a clean glass vial having a minimum 40 ml capacity. Add at least 10 grams of the soil sample and record the weight.

4.2 Add at least 10 grams of reverse osmosis water to the soil sample and shake for 20 seconds.

4.3 Allow the sample to set for a period of 5 minutes or until the separation of soil and water.

4.4 Carefully pour the free liquid extract from the sample through a paper filter into a clean plastic cup if necessary.

5.0 Titration Procedure

5.1 Using a graduated pipette, remove 10 ml extract and dispense into a clean plastic cup.

5.2 Add 2-3 drops potassium chromate (K_2CrO_4) to mixture.

5.3 If the sample contains any sulfides (hydrogen or iron sulfides are common to oilfield soil samples) add 2-3 drops of hydrogen peroxide (H_2O_2) to mixture.

5.4 Using a 1 ml pipette, carefully add .282 normal silver nitrate (one drop at a time) to the sample while constantly agitating it. Stop adding silver nitrate when the solution begins to change from yellow to red. Be consistent with endpoint recognition.

5.5 Record the ml of silver nitrate used.

6.0 Calculation

To obtain the chloride concentration, insert measured data into the following formula:

$$\frac{.282 \times 35{,}450 \times \text{ml } AgNO_3}{\text{ml water extract}} \times \frac{\text{grams of water in mixture}}{\text{grams of soil in mixture}}$$

Using Step 5.0, determine the chloride concentration of the RO water used to mix with the soil sample. Record this concentration and subtract it from the formula results to find the net chloride in the soil sample.

Record all results on the delineation form.

Rice Operating Company

Quality Procedure
Development of Cased Water-Monitoring Wells

1.0 Purpose

This procedure outlines the methods to be employed to develop cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

3.0 Sample Collection and Preparation

3.1 Prior to development, the static water level and height of the water column within the well casing will be measured with the use of an electric D.C. probe or a steel engineer's tape and water sensitive paste.

3.2 All measurements will be recorded within a field log notebook.

3.3 All equipment used to measure the static water level will be decontaminated after each use by means of Liquinox, a phosphate free laboratory detergent, and water to reduce the possibility of cross-contamination. The volume of water in each well casing will be calculated.

4.0 Purging

4.1 Wells will be purged by using a 2" decontaminated submersible pump or dedicated one liter Teflon bailer. Wells should be purged until the pH and conductivity are stabilized and the turbidity has been reduced to the greatest extent possible.

4.2 If a submersible is used the pump will be decontaminated prior to use by scrubbing the outside surface of tubing and wiring with a Liquinox water mixture, pumping a Liquinox-water mixture through the pump, and a final flush with fresh water.

5.0 Water Disposal

5.1 All purge and decontamination water will be temporarily stored within a portable tank to be later disposed of in an appropriate manner.

6.0 Records

6.1 Rice Operating Company will record the amount of water removed from the well during development procedures. The purge volume will be reported to the appropriate regulatory authority when filing the closure report.

Rice Operating Company

Quality Procedure

Procedure for Obtaining Water Samples (Cased Wells) *Using One Liter Bailer*

1.0 Purpose

This procedure outlines the methods to be employed in obtaining water samples from cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the water. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 The following table shall be used to select the appropriate sampling container, preservative method and holding times for the various elements and compounds to be analyzed.

Compound to be Analyzed	Sample Container Size	Sample Container Description	Cap Requirements	Preservative	Maximum Hold Time
BTEX	40 ml	VOA Container	Teflon Lined	HCl	7 days
TPH	1 liter	clear glass	Teflon Lined	HCl	28 days
PAH	1 liter	amber glass	Teflon Lined	Ice	7 days
Cation/Anion	1 liter	clear glass	Teflon Lined	None	48 Hrs
Metals	1 liter	HD polyethylene	Any Plastic	Ice/HNO_3	28 Days
TDS	300 ml	clear glass	Any Plastic	Ice	7 Days

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the well identification and the individual tests to be performed at that location. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

5.0 Bailing Procedure

5.1 Identify the well from the sites schematics. Place pre-labeled jar(s) next to the well. Remove the plastic cap from the well bore by first lifting the metal lever and then unscrewing the entire assembly.

5.2 Using a dedicated one liter Teflon bailer, purge a minimum of three well volumes. Place the water in storage container for transport to a ROC disposal facility.

5.3 Take care to insure that the bailing device and string do not become cross-contaminated. A clean pair of rubber gloves should be used when handling either the retrieval string or bailer. The retrieval string should not be allowed to come into contact with the ground.

6.0 Sampling Procedure

6.1 Once the well has been bailed in accordance with 5.2 of this procedure, a sample may be decanted into the appropriate sample collection jar directly from the bailer. The collection jar should be filled to the brim. Once the jar is sealed, turn the jar over to detect any bubbles that may be present. Add additional water to remove all bubbles from the sample container.

6.2 Note the time of collection on the sample jar with a fine Sharpie.

6.3 Place the sample directly on ice for transport to the laboratory. The preceding table shows the maximum hold times between collection and testing for the various analyses.

6.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

7.0 Documentation

7.1 The testing laboratory shall provide the following minimum information:

A. Project and sample name.
B. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
C. Results of the requested analyses
D. Test Methods employed
E. Quality Control methods and results

Calculation for Determining the Minimum Bailing Volume for Monitor Wells
Formula V= ($\pi r^2 h$)
2" well [V/231=gal] X 3 = Purge Volume

V=Volume
π=pi
r=inside radius of the well bore
h=maximum height of well bore in water table

Example:

π	r^2	h(in)	V(cu.in)	V(gal)	X 3 Volumes	Actual
3.1416	1	180	565.488	2.448	7.34 gal	>10 gal

Rice Operating Company

QUALITY PROCEDURE
Sampling and Testing Protocol for VOC in Soil

1.0 Purpose

This procedure is to be used to determine the concentrations of Volatile Organic Compounds in soils.

2.0 Scope

This procedure is to be used as the standard field measurement for soil VOC concentrations. It is not to be used as a substitute for full spectrographic speciation of organic compounds.

3.0 Procedure

3.1 Sample Collection and Preparation

3.1.1 Collect at least 500 g. of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample of soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).

3.1.2 The soil sample(s) shall be immediately inserted into a one-quart or larger polyethylene freezer bag and sealed. When sealed, the bag should contain a nearly equal space between the soil sample and trapped air. Record the sample name and the time that the sample was collected on the Field Analytical Report Form.

3.1.3 The sealed samples shall be allowed to set for a minimum of five minutes at a temperature of between 10-15 Celsius, (59-77 ^{0}F). The sample temperatures may be adjusted by cooling the sample in ice, or by heating the sample within a generally controlled environment such as the inside of a vehicle. The samples should not be placed directly on heated surfaces or placed in direct heat sources such as lamps or heater vents.

3.1.4 The sealed sample bag should be massaged to break up any clods, and to provide the soil sample with as much exposed surface area as practically possible.

3.2 Sampling Procedure

3.2.1 The instrument to be used in conducting VOC concentration testing shall be an Environmental Instruments 13471 OVM / Datalogger or a similar PID-type instrument. (Device will be identified on VOC Field Test Report Form.) Prior to use, the instrument shall be zeroed-out in accordance with the appropriate maintenance and calibration procedure outlined in the instrument operation manual. The PID device will be calibrated each day it's used.

3.2.2 Carefully open one end of the collection bag and insert the probe tip into the bag taking care that the probe tip not touch the soil sample or the sidewalls of the bag.

3.2.3 Set the instrument to retain the highest result reading value. Record the reading onto the Field Test Report Form.

3.2.4 If the instrument provides a reading exceeding 100 ppm, proceed to conduct BTEX Speciation in accordance with **QP-02 and QP-06. If the reading is 100 ppm or less, NMOCD BTEX guideline has been met and no further testing for BTEX is necessary. File the Field Test Report Form in the project file.**

4.0 Clean-up

After testing, the soil samples shall be returned to the sampling location, and the bags collected for off-site disposal. **IN NO CASE SHALL THE SAME BAG BE USED TWICE. EACH SAMPLE CONTAINER MUST BE DISCARDED AFTER EACH USE.**