AP - 008

STAGE 1 & 2 WORKPLANS

DATE: JAN. 19, 1999

STAGE I ABATEMENT PLAN

January 19, 1999

Pipeline Junction I-9
Hobbs Salt Water Disposal System
Northeast 1/4 of the Southeast 1/4
Section 09, Township 19 South, Range 38 East
Lea County, New Mexico

Prepared by:

F. Wesley Root

RICE *Operating Company*

122 West Taylor

Hobbs, New Mexico 88240

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1.0 INTRODUCTION

1.1 Site Description

Junction I-9 is a former pipeline connection point on the 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 the NE ¼ of the NE ¼ of 04-T19S-R38E, approximately 0.6 miles south of the intersection of Grimes Street and Stanolind Road, Hobbs, New Mexico. A topographic map depicting the site location is presented as Figure 1, Appendix A.

1.2 Chronology of Events

The pipeline leak was discovered and repaired on June 5, 1998. Notification of an unauthorized release was submitted to the New Mexico Oil Conservation Division (OCD) District I Office in accordance with Rule 116 by Rice Operating Company (Rice). The surface area adversely impacted by the release covered approximately 6,360 square feet.

The pipeline was permanently repaired on August 12, 1998. Excavation operations performed at the site between August 24, 1998 and September 21, 1998 verified that vertical extent of impact extended to a minimum depth of 16 feet below ground surface. The soil sample obtained from the deepest point of the excavation recorded an OVM (organic vapor meter) reading of 264 ppm (parts per million).

On October 20 and 21, 1998, Rice contracted Enercon Services to conduct a subsurface investigation in order to delineate the extent of impact. During the investigation, seven soil borings were completed using an air rotary rig and 39 soil samples were collected for screening / laboratory analysis. The samples were screened for volatile organic compounds with an OVM using the OCD headspace method. A minimum of two samples from each boring were submitted for BTEX (benzene, toluene, ethylbenzene, and total xylenes) and TPH (total petroleum hydrocarbon) analysis. The investigation results are documented in Enercon's Drilling and Soil Boring Report, dated December 16, 1998 (Appendix B).

Crude oil was observed in soil borings B-1 and B-2 during the investigation. Crude oil was encountered floating on top of the water table at a depth of approximately 31 feet

below ground surface. The crude oil plume is apparently confined to a localized area southeast of the release since it was not encountered in borings B-3 through B-7.

Immediate verbal notification of the discovery of hydrocarbon-impacted ground water was submitted to the OCD District I Office on October 20, 1998 in accordance with Rule 116. Written notification was submitted to the Environmental Bureau Chief, OCD, Santa Fe, New Mexico by Rice on October 22, 1998. A crude oil sample was collected from boring B-1 and ground water samples were collected from borings B-1, B-3, and B-4 to assess ground water contamination. Mr. Buddy Hill, OCD District I representative, was present to witness the ground water sampling event.

The API gravity of the oil measured 43.5 at 60° F. Groundwater analytical results from the three borings recorded BTEX, chloride, and TDS concentrations that exceeded New Mexico Water Quality Control Commission (WQCC) Human Health Standards.

Rice requested OCD approval to begin interim abatement activities on December 15, 1998. The purpose of this request was to begin abatement of the crude oil plume while abatement plan approval is pending. Rice received OCD approval on December 17, 1998 and initiated interim abatement activities on January 7, 1999. The work included installation of three monitoring wells and one crude oil recovery well.

The monitor wells (MW-1, MW-2, and MW-3) were placed in a triangular configuration around the release location and orientated so that one well was located up gradient and two wells were located down gradient relative to regional ground water flow. The recovery well (RW-1) was located immediately down gradient from the release site. The well locations are shown on the potentiometric surface map (Figure 2, Appendix A).

Monitor wells MW-1, MW-2, and MW-3 were developed and sampled in accordance to Section 3.4 on January 16, 1999.

2.0 PROPOSED STAGE I ABATEMENT PLAN

2.1 Stage I Abatement Plan Activities

1. Review published information for the area to determine site geology, hydrogeology, and physical properties of the aquifer.

2. Conduct a registered water well search within one mile of the site.

3. Install a minimum of one monitoring well to delineate the extent of ground water impact.

4. If conditions dictate, install additional wells to delineate the vertical and horizontal extent of ground water impact.

5. Collect soil samples for field screening and/or laboratory analysis from each boring to determine the vertical extent and magnitude of impact to the vadose zone.

6. Visually inspect soil samples and classify the subsurface soil profile in accordance with the Unified Soil Classification System.

7. Collect ground water samples for laboratory analysis from each monitoring well to determine the magnitude of impact to ground water.

8. Obtain depth to ground water measurements and calculate the ground water gradient and direction of flow.

9. Survey all well locations to establish a relative datum.

10. Prepare a report summarizing field activities and laboratory results.

2.2 Scope of Work

A generalized scope of work is presented below. The actual scope of work may be adjusted in the field based upon conditions encountered.

Phase I — One monitor well will be installed down gradient relative from the suspected source area as depicted in Figure 3, Appendix A. Drill cutting samples will be collected on 5 foot intervals and field screened for evidence of impact. Should evidence of impact be identified, soil samples will be collected using a split-spoon sampler. The samples will be field screened, and selected samples will be prepared and shipped to the laboratory for analysis.

Once the soil boring is completed, a permanent well consisting of factory slotted PVC and blank riser will be placed in the open hole of each boring designated as a permanent well.

Phase II — If contaminant delineation is not achieved with the Phase I well, additional wells will be installed approximately 50 feet down gradient from the previously installed wells that contain contaminant levels which exceed background concentrations.

Phase III — If contaminant delineation is not achieved by the wells installed during Phase II, additional wells will be installed until vertical and horizontal delineation of the contaminants has been achieved.

2.3 Soil Assessment

The vertical and horizontal extent of impact to the vadose zone was delineated by soil borings during the subsurface investigation on October 20 and 21, 1998 (Drilling and Soil Report, Appendix B).

2.4 Ground Water Assessment

Upon completion of drilling, each well will be gauged to determine the depth to ground water and LNAPL (light non-aqueous phase liquid) thickness, if present. Once well construction is complete, each well that does not contain LNAPL will be purged and ground water samples collected.

Ground water samples from each well will be submitted for laboratory analysis.

2.5 Surface Water Assessment

A field survey of the release site and surrounding area identified no residences, water wells, or surface bodies of water within a 1,000 foot radius. The search has been expanded to include potential surface bodies of water within one mile of the site. No evidence of adverse environmental impact to potential surface bodies of water has been identified. Additional investigation will be performed, should site conditions require it.

2.6 Monitoring Program

All monitoring wells will be sampled for the analytical parameters listed in section 3.4 to provide base line data. Items that measure levels below method detection levels will be excluded from quarterly monitoring. Monitor wells, designated as approved compliance sampling stations, will be sampled quarterly for determination of parameter concentrations. An annual Ground Water Monitoring Report, containing the results of the quarterly sampling events for the year, will be submitted within 45 days of the 4th quarter sampling event.

3.0 QUALITY ASSURANCE / QUALITY CONTROL (QA/QC) PROCEDURES

3.1 Decontamination of Equipment

Cleaning of drilling equipment will be the responsibility of the drilling company. In general, the cleaning procedures will consist of using high pressure steam to wash the drilling and sampling equipment prior to drilling and prior to begining each borehole. Sampling equipment will be cleaned with Liqui-Nox detergent and rinsed with distilled water prior to use.

3.2 Soil Sampling

During drilling operations grab samples of the drill cuttings will used to determine lithology. Samples of the subsurface soils will be obtained at selected discrete intervals utilizing a driven split spoon sampler or rock core bit.

Representative soil samples will be divided into two separate portions. One portion of the soil sample will be placed in a disposable sample bag. The bag will be labeled and sealed for field screening using a organic vapor monitor (OVM) calibrated to a 100 ppm isobutylene standard. Each sample will be allowed to volatilize for approximately 30 minutes at ambient temperature prior to conducting the analysis.

The other portion of the soil sample will be placed in a sterile glass container equipped with a teflon-lined lid furnished by the analytical laboratory. The container will be filled to capacity to limit the amount of head-space present. Each container will be labeled and placed on ice in an insulated cooler. Upon selection of samples for analysis, the cooler will be sealed for shipment to the laboratory. Chain-of-custody documentation will be maintained throughout the sampling process.

Soil samples will be transported to an approved laboratory for analyses. Soil samples will be analyzed within 14 days following the collection date.

The analytical parameter and its corresponding analytical method for soil samples are listed below.

Analytical Parameter	EPA Method
BTEX	8020
TPH	modified 8015M

3.3 Monitor Well Installation

Monitor wells will be constructed of schedule 40 PVC pipe with threaded connections and schedule 40 factory slotted PVC well screen with a slot width of either 0.01 or 0.02 inch. Wells will be designed to screen the entire thickness of the target zone. A minimum screen length of 15 feet will be installed in wells designed to monitor for LNAPL (light non-aqueous phase liquid) with the top of the screen set approximately five feet above the water table.

A graded, clean silica sand will be placed in the annulus of the screened interval and extend a minimum of one foot above the top of the screen. A bentonite seal with a minimum thickness of two feet will be set immediately above the sand pack to prevent potential groundwater contamination by migration down the well bore. The annulus above the bentonite seal will be filled to the ground surface with cement grout containing 3 to 5% bentonite.

3.4 Ground Water Sampling

Monitor wells will be developed and purged with a PVC bailer. The bailer will be cleaned prior to each use with Liqui-Nox detergent and rinsed with distilled water. Monitor wells with sufficient recharge will be purged by removing a minimum of three well volumes of water. Monitor wells that do not recharge sufficiently will be purged until no additional water can be obtained.

After purging the wells, ground water samples will be collected with a disposable teflon sampler and polyethylene line by personnel wearing disposable gloves. Ground water sample containers will be filled in the order of decreasing volatilization sensitivity.

Ground water samples will be placed in sterile sample containers with teflon-lined caps. Sample containers will be provided by the analytical laboratory. The sample containers will be filled to capacity and visually checked to ensure the absence of air bubbles.

The filled container will be labeled and placed on ice in an insulated cooler. The cooler will be sealed for transportation to the analytical laboratory. Chain-of-custody documentation will be maintained throughout the sampling process.

Selected ground water samples will be analyzed in accordance with following:

Analytical Parameter	**EPA Method**
BTEX	8020
VOCs	8260
SVOCs	8270
Major Cations	SM4500CO2D
Major Anions	300.0
Metals	ICP6010
TDS	160.1

3.5 Laboratory Protocol

Southern Petroleum Laboratories, Houston, Texas, will be responsible for proper QA/QC procedures. These procedures will either be transmitted with the laboratory reports or on file at the laboratory.

4.0 Schedule of Activities

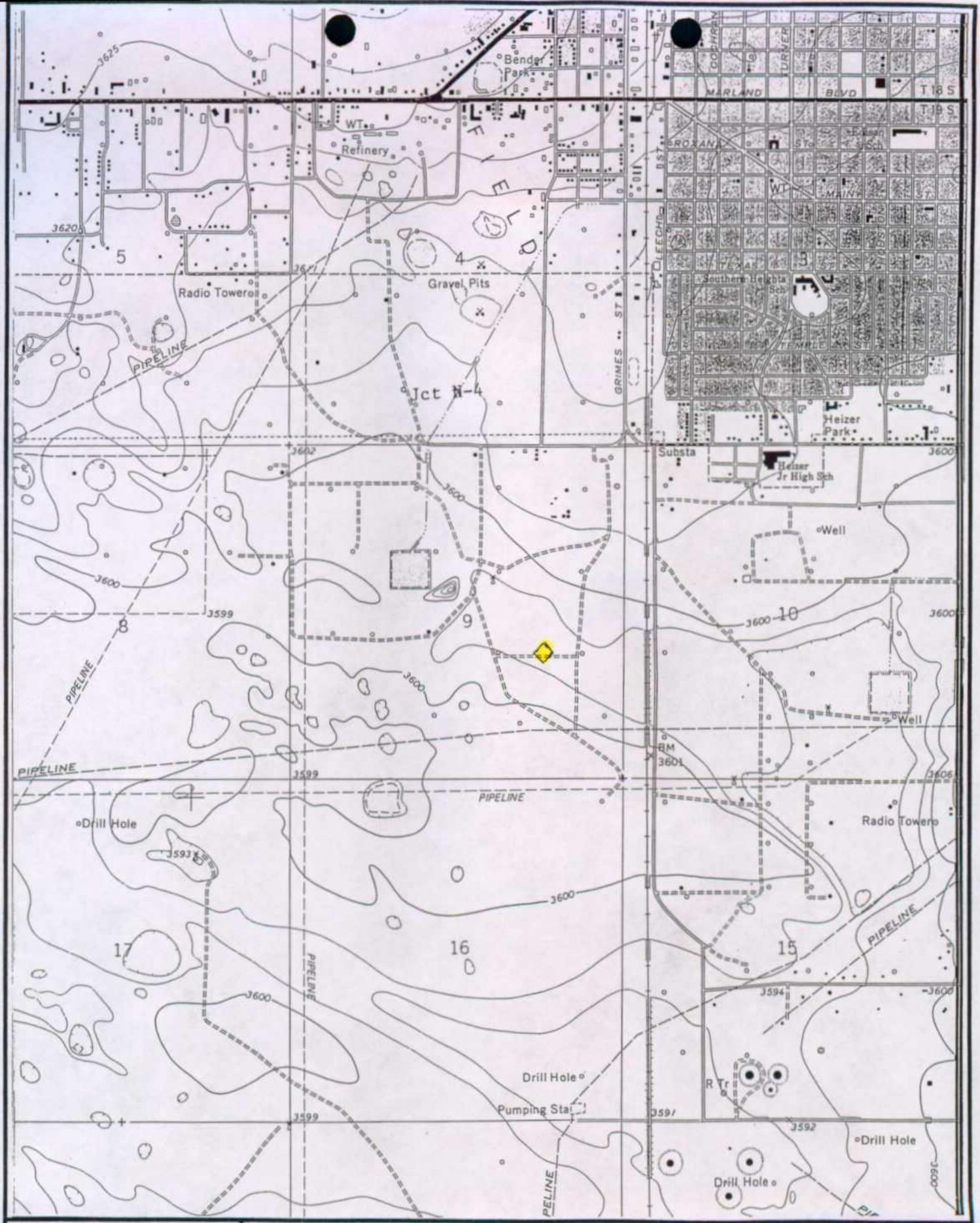
A report documenting the results of the interim abatement activities will be submitted within 45 days of the completion of these activities. The scope of work for Phase I activities will be finalized based on evaluation of the results from the interim abatement activities.

The Phase I, II, and III activities will be scheduled following written approval of this plan by the OCD. Field activities will be initiated immediately, subject to the availability of qualified contractors. Following completion of Phase I, the developed data will be compiled and analyzed to determine appropriate locations for Phase II wells, if required.

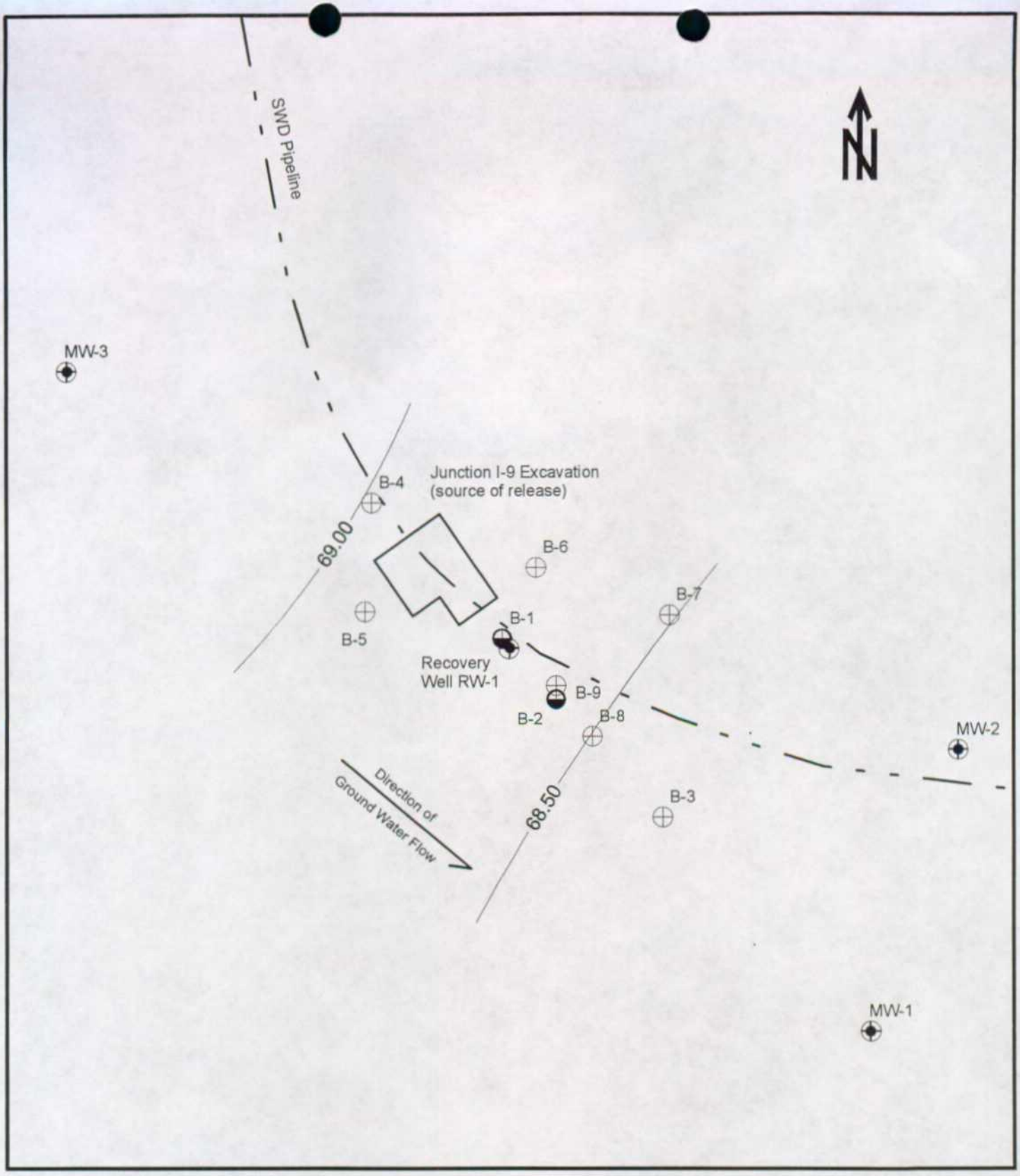
A Final Site Investigation Report will be submitted within 45 days of the completion of the site investigation.

APPENDIX A

Figures



Rice Operating Company 122 W. Taylor Hobbs, NM 88240 Ph: (505) 393-9174 FAX 397-1471	**Figure 1** Map Legend ◇ - 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



POTENTIOMETRIC SURFACE MAP OF THE TOP OF THE WATER TABLE

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

Rice Operating Company
122 W. Taylor
Hobbs, NM 88240

Contour interval = 0.50 feetl
Constructed from gauging measurements obtained on 1/12/99
Relative BM = 100 feet, top of casing on MW-3

Monitor/recovery well
Soil boring w/ LNAPL
Soil boring

Map Scale
0' 20' 40'

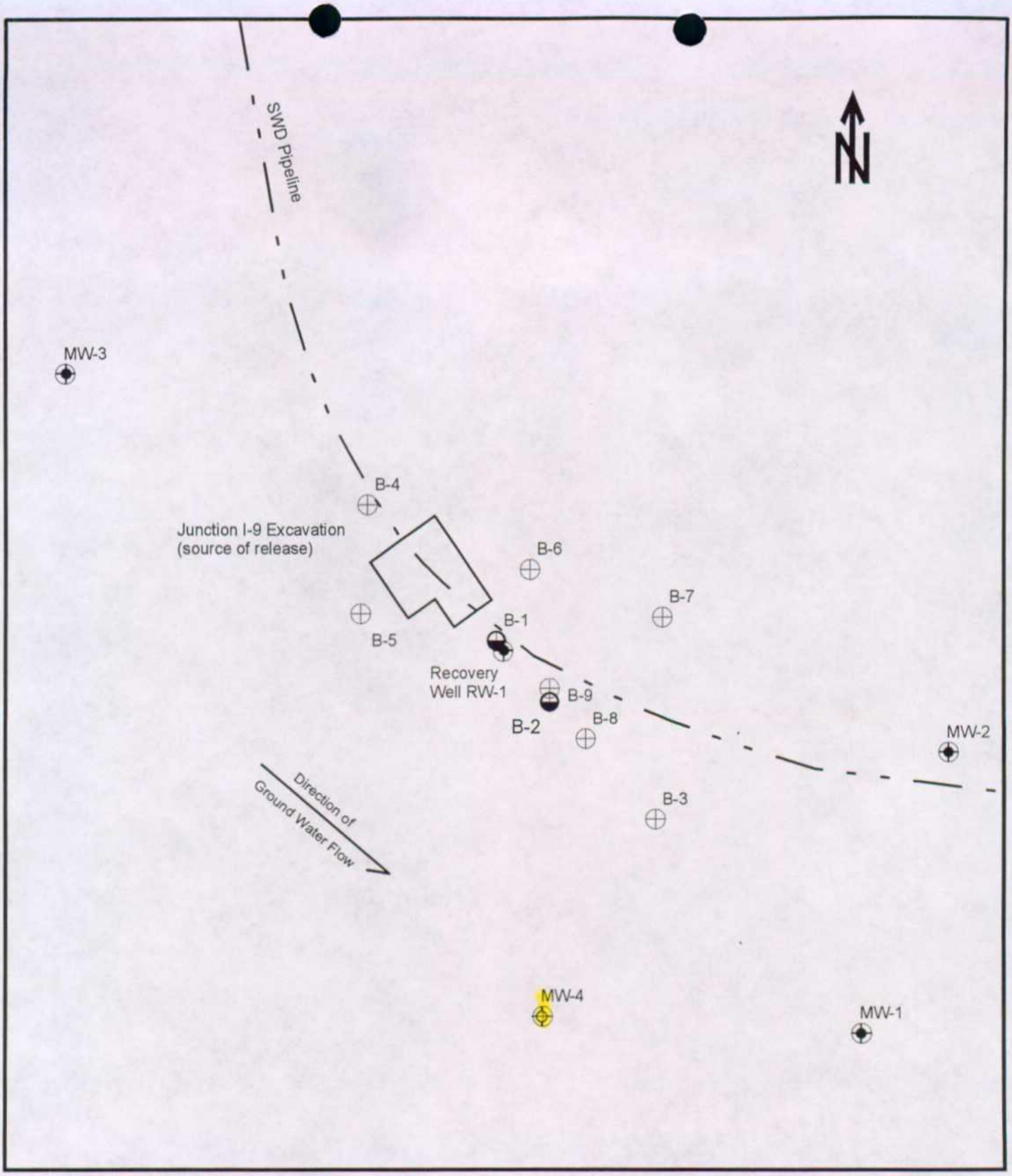


FIGURE 3

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 monitor/recovery well
- Monitor/recovery well
- Soil boring
- Soil boring w/ LNAPL

Map Scale
0' 20' 40'

APPENDIX B

Soil Boring Report
Enercon Services

ENERCON SERVICES, INC.
An Employee Owned Company

2775 Villa Creek, Suite 120
Dallas, TX 75234
(972) 484-3854
Fax: (972) 484-8835

December 16, 1998
EV-958

Mr. F. Wesley Root
RICE Operating Company
122 West Taylor
Hobbs, New Mexico

RE: Drilling and Soil Sampling Report
Junction I-9, Hobbs SWD System
Lea County, New Mexico

Mr. Root:

Enercon Services, Inc. (Enercon) conducted drilling and soil sampling activities at the above listed location on October 20 and 21, 1998. The site is located at cordinants NE1/4, SE1/4, 09-T195-R38E, approximately 0.6 miles south of the intersection of Grimes Street and Stanolind Road, Hobbs, New Mexico (Figure 1, Attachment A). The purpose of the drilling activities was to collect soil and groundwater samples in order to assess subsurface conditions with respect to petroleum hydrocarbons: This report summarizes the field activities and laboratory analytical results.

Prior to conducting drilling activities, the site had been excavated in an area where surface soil staining indicated the presence of a release of crude oil. The area was excavated to a depth of approximately six (6) feet, exposing a twelve inch salt water disposal pipeline. Within the excavated area another smaller excavation was completed adjacent to (southwest) the pipeline to an approximate depth of 16 feet (Figure 2, Attachment A).

On October 20 and 21, 1998, soil borings B-1 through B-7 were drilled to assess the extent of petroleum hydrocarbon impact. Drilling operations were conducted by West Texas Water Well Service and supervised by Enercon and RICE Operating Company personnel. The excavated area and soil boring locations are illustrated on Figure 2, Attachment A.

The soil borings were drilled to depths of 30 to 34 feet below ground surface (bgs) using an air rotary drilling rig. Sampling procedures consisted of drilling to the desired depths and obtaining soil samples with a core sampling tool or Split Spoon sampling device. In general, soil samples were collected at five foot intervals and field screened for volatile organic constituents (VOCs) with a Thermo Environmental Instruments, Inc., Model 580B Organic Vapor Meter (OVM) using the head space procedure described in Guidelines for Remediation of Leaks, Spills and Releases, New Mexico Oil Conservation Division, August 13, 1993. The OVM readings are presented on the boring logs in Attachment C.

The soil boring penetrated groundwater at depths ranging from approximately 31 feet to 33 feet below ground surface. Borings B-1 and B-2 encountered phase-separated hydrocarbons (PSH) floating on top of the water table. The PSH was measured on 10/21/98 and had an apparent thickness of approximately 0.8 feet. No

evidence of PSH was observed in borings B-3, B-4, B-5, B-6, or B-7. Depth to water and PSH thickness measurements are presented on the boring logs in Attachment C.

Once drilling and sampling operations were completed, the borings were abandoned by filling each bore hole with bentonite.

Groundwater samples were collected from borings B-3 (downgradient of the excavation) and B-4 (upgradient of the excavation). The groundwater samples selected were placed on ice and transported to Certes Environmental Laboratories in Dallas, Texas for laboratory analysis. The samples were analyzed for Benzene, Toluene, Ethyl benzene and Xylene (BTEX) using EPA Method 8021B, chloride using EPA Method SM 4500Cl.B and Total Dissolved Solids (TDS) using EPA Method 160.1. Laboratory analytical results and field screening results are presented in the Table section in Attachment B of this document.

Soil samples selected for laboratory analysis were placed on ice and transported to Certes Environmental Laboratories in Dallas, Texas. Samples collected from each boring were analyzed for total petroleum hydrocarbons (TPH) - Diesel Range Organics (DRO) using EPA Method 8015B and for Benzene, Toluene, Ethyl benzene and Xylene (BTEX) using EPA Method 8021B. The laboratory and field screening results are summarized in the Table section, Attachment B of this document. The laboratory reports are included in Attachment E.

A photo log illustrating and describing field activities is presented in Attachment D of this report.

Enercon Services, Inc. appreciates the opportunity to provide you with our professional consulting services on this important project. If you have any questions or if we can be of further assistance, please do not hesitate to call.

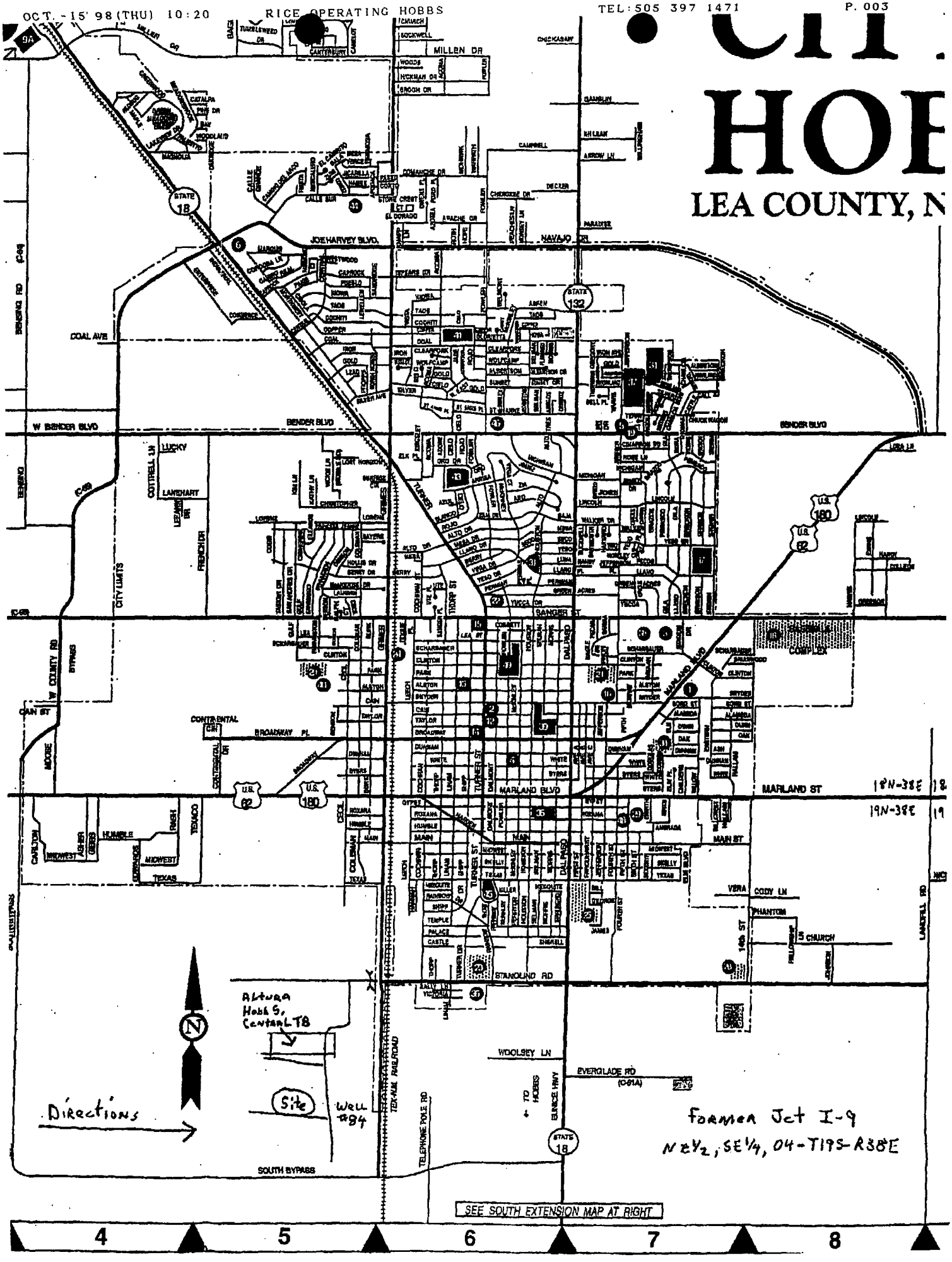
Respectfully,
Enercon Services, Inc.

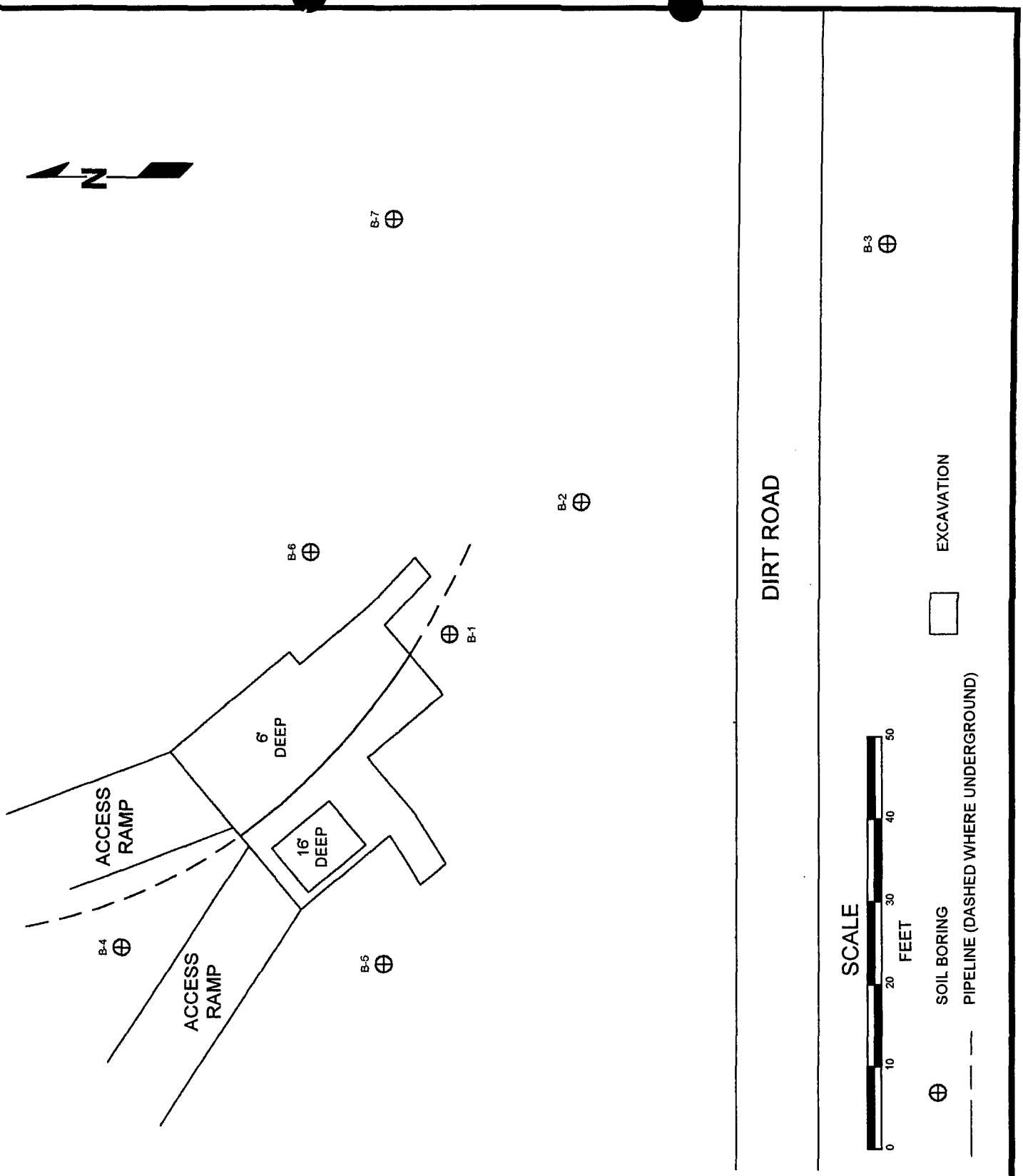
Scott A. Lowry, REP
Senior Project Manager

Charles D. Harlan, C.P.G.
Manager, Environmental Services

ATTACHMENT A
FIGURES

CIT
HOB
LEA COUNTY, N





SOIL BORING LOCATIONS
JUCT. I-9
HOBBS SWD SYSTEM
9-T.19S-R38E

ENERCON SERVICES, INC.

2775 VILLA CREEK
SUITE 120
DALLAS, TX 75234
(972)484-3854

DATE:	SCALE:
11/2/98	AS SHOWN
PROJECT: EV-958	FIGURE 2

ATTACHMENT B
SOIL and GROUNDWATER
TABLES

Soil Sample Analytical Results
Rice Operating Company
Junction Box I-9, Hobbs SWD System
Lea County, Hobbs, New Mexico

Soil Boring	Date	Depth Interval (feet)	OVM Reading	B	T	E	X	TPH (DRO)
B-1	10/20/98	20-20.6	54	684	759	11000	21700	1070
		28	261	285	1000	9170	24600	1200
		30	195	1130	1030	13800	19500	1130
B-2	10/20/98	25-26	274	477	716	11300	25200	520
		30-31	174	<50	70	870	2510	278
B-3	10/20/98	25	214	<200	1520	6950	15900	369
		31-33	8	<50	<50	<50	<150	<10
B-4	10/20/98	20	177	<50	207	178	764	50
		30	6.2	<50	<50	<50	<150	47
B-5	10/20/98	20	174	<50	288	188	759	22
		25	81	<50	268	264	566	69
		30	28	<50	<50	<50	<150	18
B-6	10/21/98	20-21	290	<50	1390	1440	4660	71
		25-26	237	460	4260	12200	26400	234
		30-31	255	581	130	2900	4170	25
B-7	10/21/98	25-26	125	<50	100	<50	<150	106
		30	145	<50	214	865	2190	10

BTEX results obtained using EPA Method 8021B,
and reported in parts per billion, (ppb).
TPH (Diesel Range Organics; DRO) results obtained using EPA Method 8015A,
and reported in parts per million, (ppm).
OVM results reported in parts per million, (ppm).

Groundwater Sample Analytical Results
Rice Operating Company
Junction Box I-9, Hobbs SWD System
Lea County, Hobbs, New Mexico

Boring	Date	Depth to Water	B	T	E	X	Chloride	TDS
B-3	10/21/98	31'	14200	<50	1310	780	230	1710
B-4	10/21/98	32.8'	618	331	182	226	2400	5460

BTEX results obtained using EPA Method 8021B,
and reported in parts per billion, (ppb).
Chloride results obtained using EPA Method SM 4500 Cl.B,
and reported in parts per million, (ppm).
Total Dissolved Solids, (TDS) results obtained using EPA Method 160.1,
and reported in parts per million, (ppm).

ATTACHMENT C
SOIL BORING 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 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'				
	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	6 / 9:50	Core	261	Sample 6 collected at 28' using a core sampling tool. Sample was hard red chert and caliche stained blue-gray. Strong odor.
	Hard red chert stained blue-gray. Caliche stained gray from 28' to 30'.				
30		7 / 10:00	Core	195	Sample 7 collected at 30' using a core sampling tool. Sample was power caliche stained gray. Some odor.
	Caliche and sand stained gray from 30' to approximately 32'.				
		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 of 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-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-2	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'				
	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					
		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.
15	Light tan soft caliche and fine sand with intermittent hard layers and no evidence of staining from 15' to approximately 25'.				
		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.
20					
		3 / 14:20	Core	214	Sample 3 collected at 25' using a coring tool. Sample was crumbly caliche stained blue-gray. Strong odor.
25	Light tan caliche stained blue-gray. Staining color became darker blue-gray from 25' to approximately 30'.				
		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.
30	Crumbly caliche stained dark gray with thin black lines in the center of the core, from 30' to 31'.				
		5 / 1435	SS	8	Sample 5 collected from 31' to 33' using a split spoon. Sample was tan sand, no stain or odor.
35	Tan sand from 31' 33'.				
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 - Continuos 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 Company: West Texas Water Well Service	Drilling Method: Air Rotary
	Droller: 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'				
	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 approximately25' 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 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'				
	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'.				
10					
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 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

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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-6	Date Drilled: 10/21/98
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"				
	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 cori tool. Sample was light gray silty sand. No odor.
		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.
10					
		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.
15	Light gray to brown silty sand from 15' to approximately 25'.				
		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.
20					
		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.
25	Tan and gray silty sand from 25' to approximately 30'.				
		6 / 9:05	Core	255	Sample 6 collected at 30' to 31' using a core sampling tool. Sample was tan sand Some odor.
30	Tan sand from 30 to 33'.				
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

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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 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"				
	Light tan to gray caliche and sand from 6" to 5'.				
5	Light gray caliche and silty sand from 5' to 15'.				
10					
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.
35					
40	**Total depth of boring, 31 feet.** **Depth to groundwater, NONE.** **Phase-separated hydrocarbon (PSH), NONE, measured on 10/21/98.**				

ABBREVIATIONS AND SYMBOLS

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MD - Mud Drilling

ATTACHMENT D
PHOTOLOG

Enercon Services
Photographic Record

Client: RICE Operating Company

Project Number: EV-958

Site Name: Junction Box I-9, Hobbs SWD System

Site Location: Lea County, New Mexico

Photographer:

Scott A. Lowry

Date:

October 20, 1998

Direction:

Looking southeast

Comments:

SWD pipeline excavation.

Drilling boring B-1.

Photographer:

Scott A. Lowry

Date:

October 20, 1998

Direction:

Looking east.

Comments:

Drilling boring B-2.

Enercon Services
Photographic Record

Client: RICE Operating Company **Project Number:** EV-958

Site Name: Junction Box I-9, Hobbs SWD System **Site Location:** Lea County, New Mexico

Photographer:

Scott A. Lowry

Date:

October 20, 1998

Direction:

Looking south

Comments:

Drilling boring B-3 in foreground.

Gauging boring B-1 in background.

Photographer:

Scott A. Lowry

Date:

October 20, 1998

Direction:

Looking south

Comments:

Drilling boring B-4.

Enercon Services
Photographic Record

Client: RICE Operating Company **Project Number:** EV-958

Site Name: Junction Box I-9, Hobbs SWD System **Site Location:** Lea County, New Mexico

Photographer:

Scott A. Lowry

Date:

October 20, 1998

Direction:

Looking southwest

Comments:
SWD pipeline excavation foreground.

Drilling boring B-5.

Photographer:

Scott A. Lowry

Date:

October 21, 1998

Direction:

Looking north.

Comments:

Drilling boring B-6.

Temporary monitor well TMW-1/B-1 can be seen to the west of B-6.

Enercon Services
Photographic Record

Client: RICE Operating Company **Project Number:** EV-958

Site Name: Junction Box I-9, Hobbs SWD System **Site Location:** Lea County, New Mexico

Photographer:

Scott A. Lowry

Date:

October 21, 1998

Direction:

Looking southeast

Comments:

Drilling boring B-7.

Temporary monitor well TMW-1/B-1 can be seen to the west of B-7.

Photographer:

Scott A. Lowry

Date:

October 21, 1998

Direction:

Looking east

Comments:

Plugging boring B-7.

Surveying site.

Casing from TMW-1.

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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***

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
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***

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
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

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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

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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

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		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed 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

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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
	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
EPA 8015B	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

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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

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		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***

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
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

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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

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Results of Analyses - Laboratory Quality Control **File No.: 98-3543**

	Benzene	Toluene	Ethyl-benzene	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

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Analysis(es) Requested 1/2

Client Name: Rice Operating Company Ercon-Dallas
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. Lowry
Site Location: Junction Box I 9 Hobbs SWD Sys

Certes No.	Sample ID	Date	Time	Matrix[1]	No. & Type of Container[2] V	G	J	O	P[3]	BTEX	TPH 8015 (DRO)
10	B-5 / 20'	10/20/98	1623	Soil			1 ✓			✓	✓
11	B-5 / 25'	10/20/98	1635	Soil			1 ✓			✓	✓
12	B-5 / 30'	10/20/98	1645	Soil			1 ✓			✓	✓
13	B-6 / 20-21'	10/21/98	847	Soil			1 ✓			✓	✓
14	B-6 / 25-26'	10/21/98	850	Soil			1 ✓			✓	✓
15	B-6 / 30-31'	10/21/98	905	Soil			1 ✓			✓	✓
16	B-7 / 25-26'	10/21/98	945	Soil			1 ✓			✓	✓
17	B-7 / 30'	10/21/98	955	Soil			1 ✓			✓	✓

Sampled By: SAL

1 Matrix: A - Air Bag; C - Charcoal Tube; L - Liquid; OL - Oil; S - Soil; SD - Solid; SL - Sludge; WP - Wipe; W - Water/Wastewater
2 Container Type: V - 40ml VOA Vial; G - Amber or Glass 1 Liter; J - 250ml Wide-mouth Glass Jar; O - Other:
3 Preservative: HCl - Hydrochloric Acid; HNO_3 - Nitric Acid; H_2SO_4 - Sulfuric Acid; O - Other:

TAT
Standard: Date Required 10/30
RUSH: Date Required

Client Project ID: EV 958 Rice Operating Co.

Special Instructions (including specific detection limits): Client will back 8015 DRO &/or GRO KL 5pm 10/22

Certes Job Number: 98-3543 1/2

Relinquished by Sampler	Date	Time	Received By
Relinquished by	Date	Time	Received By
Relinquished by	Date 10/22/98	Time 1655	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.

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Analysis(es) Requested 2/2

Client Name: ~~Rice Operating Co.~~ Enercon - Dallas
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. Lowery
Site Location: Junction Box 19 Hobbs SWD Sys

Certes No.	Sample ID	Date	Time	Matrix[1]	No. & Type of Container[2] V	G	J	O	P[3]	BTEX	TPH 8015 (DRO)
1	B-1 / 20'-20.6	10/20/98	910	Soil			1 ✓			✓	✓
2	B-1 / 28'	10/20/98	950	Soil			1 ✓			✓	✓
3	B-1 / 30'	10/20/98	10	Soil			1 ✓			✓	✓
4	B-2 / 25'-26'	10/20/98	1110	Soil			1 ✓			✓	✓
5	B-2 / 30-31'	10/20/98	1120	Soil			1 ✓			✓	✓
6	B-3 / 25'	10/20/98	1420	Soil			1 ✓			✓	✓
7	B-3 / 31-33'	10/20/98	1435	Soil			1 ✓			✓	✓
8	B-4 / 20'	10/20/98	1515	Soil			1 ✓			✓	✓
9	B-4 / 30'	10/20/98	1540	Soil			1 ✓			✓	✓

Sampled By: SAL

1 Matrix: A - Air Bag; C - Charcoal Tube; L - Liquid; OL - Oil; S - Soil; SD - Solid; SL - Sludge; WP - Wipe; W - Water/Wastewater
2 Container Type: V - 40ml VOA Vial; G - Amber or Glass 1 Liter; J - 250ml Wide-mouth Glass Jar; O - Other:
3 Preservative: HCl - Hydrochloric Acid; HNO_2 - Nitric Acid; H_2SO_4 - Sulfuric Acid; O - Other:

TAT
Standard ~~Date Required~~ 10/30
RUSH: Date Required

Client Project ID: EV 958 Rice Operating Co.

Special Instructions (including specific detection limits): Client will call back 8015 DRO &/or GRO AL SAL 10/22

Certes Job Number: 98-3543 2/2

Relinquished by Sampler	Date 10/22/98	Time	Received By
Relinquished by	Date	Time	Received By
Relinquished by	Date 10/22/98	Time 1655	Received By Laboratory Rick 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

		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

		Result	Units	Reporting Limit	Date Prepared	Date Analyzed	Analyzed By	Dilution
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

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Analysis(es) Requested

Client Name: Rice Operating Company
Phone No.: 505 393 1174
Client Address: 122 West Taylor
Fax No.: 505 397 1471
Billing Address
City: Hobbs
State: NM
Zip: 88240
Purchase Order No.
To ensure proper billing, please reference quotation number.: EV 155
Project Manager: Scott A. Lowry
Site Location: Junction Ex 19 Hobbs SWD Sys.

Certes No.	Sample ID	Date	Time	Matrix[1]	No. & Type of Container[2] V	G	J	O	P[3]	BTEX	Chlorides	TPH
	B-3	10/21/96	430	L	2	2				✓	✓	✓
	B-4	10/21/96	1055	L	2	1				✓	✓	✓

Sampled By: AL

1 Matrix: A - Air Bag; C - Charcoal Tube; L - Liquid; OL - Oil; S - Soil; SD - Solid; SL - Sludge; WP - Wipe; W - Water/Wastewater
2 Container Type: V - 40ml VOA Vial; G - Amber or Glass 1 Liter; J - 250ml Wide-mouth Glass Jar; O - Other:
3 Preservative: HCl - Hydrochloric Acid; HNO_3 - Nitric Acid; H_2SO_4 - Sulfuric Acid; O - Other:

TAT
Standard: Date Required 10/30
RUSH: Date Required

Client Project ID: EV 155

Special Instructions (including specific detection limits)

Certes Job Number

Relinquished by Sampler	Date 10/22/96	Time	Received By
Relinquished by	Date	Time	Received By
Relinquished by	Date 10/22/96	Time 1455	Received By Laboratory Rick Kaze

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.

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

Rice Operating Company

Fax

To:	Mr. Chris Williams NMOCD District I Office	**From:**	F. Wesley Root
Fax:	(505) 393-0720	**Pages**	1
Phone	(505) 393-6161	**Date:**	01/14/99
Re:	Interim Abatement Jct I-9, 09-T19S-R38E Lea County, NM	**CC:**	Mr. Roger Anderson / Wayne Price NMOCD Environmental Bureau 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

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.

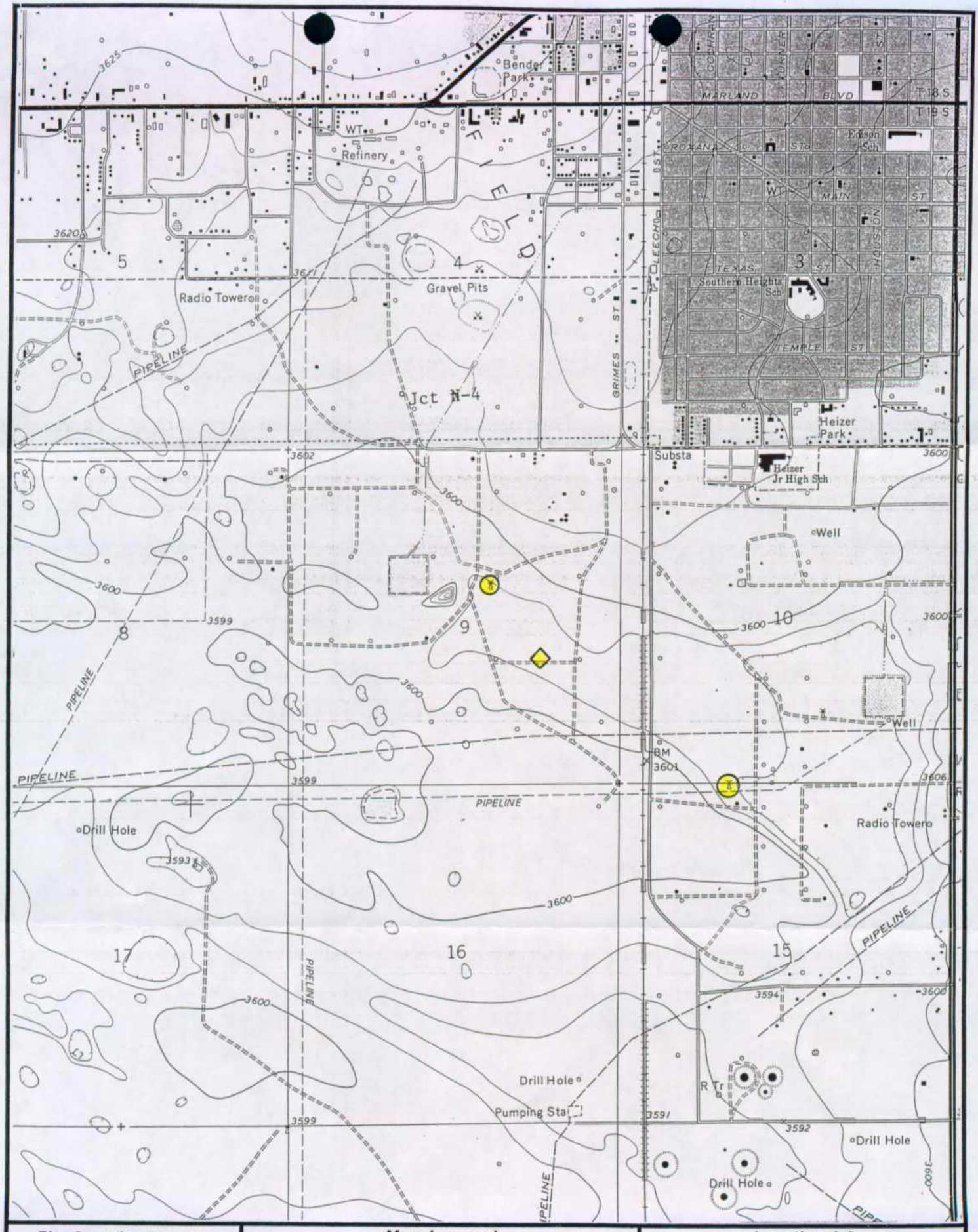
Sincerely,

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