

1R - 427-179

REPORTS

DATE:

9-20-11

Rice Environmental Consulting & Safety

P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

RECEIVED OCD

2011 SEP 21 P 11: 58

CERTIFIED MAIL

RETURN RECEIPT NO. 7008 1140 0001 3070 5917

September 20th, 2011

Mr. Edward Hansen

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

**RE: ICP Report and Termination Request
Rice Operating Company – EME SWD System
EME B-21 boot (1R427-179): UL/B sec. 21 T20S R37E
(formerly the EME Gilluly 'B' boot site)**

Mr. Hansen:

RICE Operating Company (ROC) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site in the EME Salt Water Disposal (SWD) system. ROC is the service provider (agent) 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 Parties, who provide all operating capital on a percentage/usage basis.

The site was previously referred to as the EME Gilluly 'B' boot. However, the site name has been changed to the EME B-21 boot to match its geographical location. All correspondence will reference EME B-21 boot.

Background and Previous Work

The site is located approximately 3 miles south of Monument, New Mexico at UL/B, Sec. 21, T20S, R37E as shown on the Site Location Map (Figure 1). Groundwater at this site was determined to be 51 +/- feet.

In 2004, ROC initiated work on the former EME B-21 boot junction box prior to it being replaced by a new, watertight junction box at the site. The site was delineated using a backhoe and soil samples were screened at regular intervals for both hydrocarbons and chlorides (Figure 2). The excavation reached dimensions of 10 x 10 x 12 feet bgs where composite samples were collected for laboratory verification. Laboratory tests of the site showed evidence of gasoline range organics (GRO) measuring 408 mg/kg in the backfill, <10.0 mg/kg in the 4-wall composite, and 292 mg/kg for the bottom composite. Diesel range organics (DRO) measured 5,380 mg/kg in the backfill, 351 mg/kg in the 4-wall composite, and 2,940 mg/kg on the bottom composite. Chlorides at the site were

negligible. The soils were blended on site and then backfilled into the excavation. The area was contoured to the surrounding landscape and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on June 6, 2005 and a junction box disclosure report was submitted to NMOCD with all the 2005 junction box closures and disclosures.

ICP Investigative Results

As part of the Investigation and Characterization Plan (ICP) approved by NMOCD on September 15th, 2010, ROC advanced two soil bores through the former junction box site on October 21st, 2010 (Figure 2). ROC personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID) for hydrocarbons. Chloride and PID measurement were low throughout SB-1 and SB-2. Representative samples from the bores were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers (Appendix A). SB-1 at 20 ft bgs had a laboratory chloride reading of 64 mg/kg, GRO and BTEX readings of non-detect, and a DRO reading of 838 mg/kg. SB-1 at 40 ft bgs had a laboratory chloride reading of 352 mg/kg, and GRO, DRO and BTEX readings of non-detect. SB-2 at 5 ft bgs had laboratory chloride, GRO, DRO and BTEX readings of non-detect. SB-2 at 40 ft bgs had a laboratory chloride reading of 368 mg/kg and GRO and DRO readings of non-detect. Benzene, ethylbenzene, and xylene readings were also non-detect, and toluene was relatively low with a reading of 0.077 mg/kg. The site is located next to a lease road and adjacent to a non-ROC abandoned facility. In addition, there is a non-ROC active facility across the lease road.

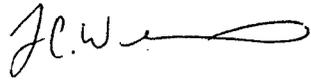
Conclusions and Recommendations

Site investigation and characterization activities proved chlorides were not a constituent of concern at this site. TPH and BTEX were present but in low concentrations. The site has a natural clay layer from 20 ft bgs to approximately 40 ft bgs. Clay has a low permeability, which greatly reduces the transportability of water and constituents through the vadose zone. A natural clay layer of an approximate thickness of 20 feet provides an infiltration barrier that will stop the downward migration of residual constituents to groundwater.

As observed in the site photos (Appendix B), the site has returned to normal vegetative capacity. Since the soil investigation showed low levels of chlorides and hydrocarbons and the site has returned to normal vegetative capacity, RECS requests 'remediation termination' status of the regulatory file.

ROC appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-9174 or me if you have any questions or wish to discuss the site.

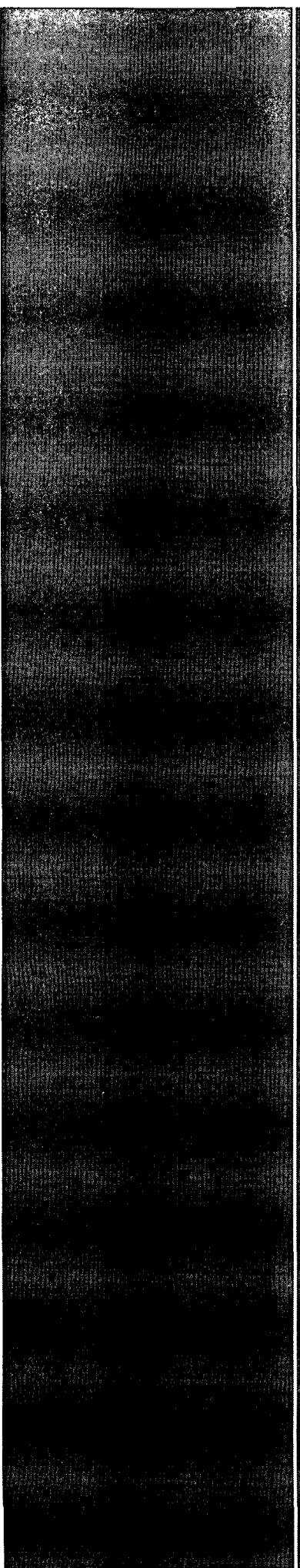
Sincerely,

A handwritten signature in black ink, appearing to read 'L. Weinheimer', with a long horizontal flourish extending to the right.

Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:

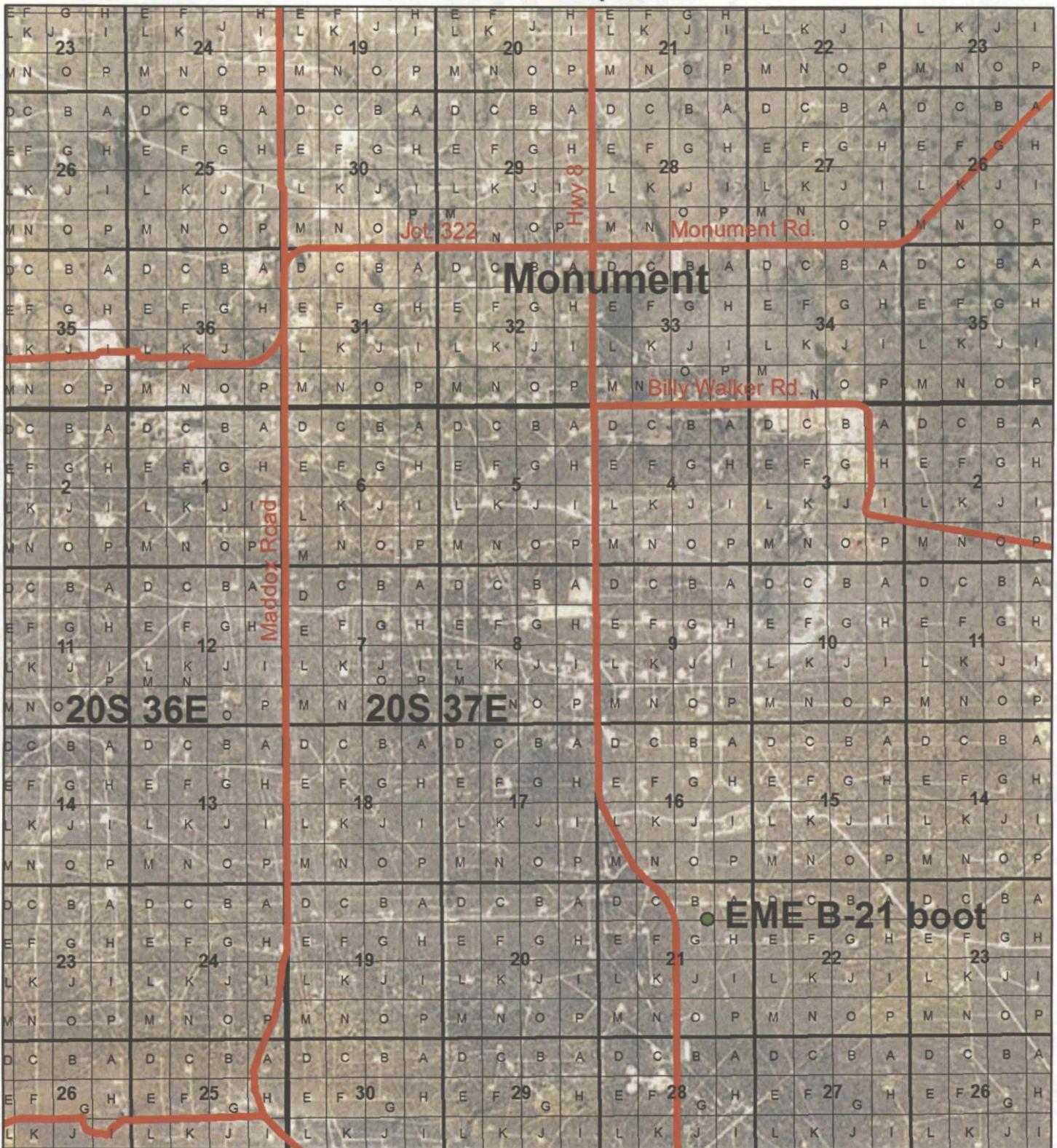
- Figure 1 – Site location map
- Figure 2 – Soil bore information map
- Appendix A – Soil bore installation and laboratory confirmation
- Appendix B – Site photos



Figures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Site map

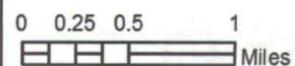


EME B-21 boot

Legals: UL/B sec. 21
T20S R37E

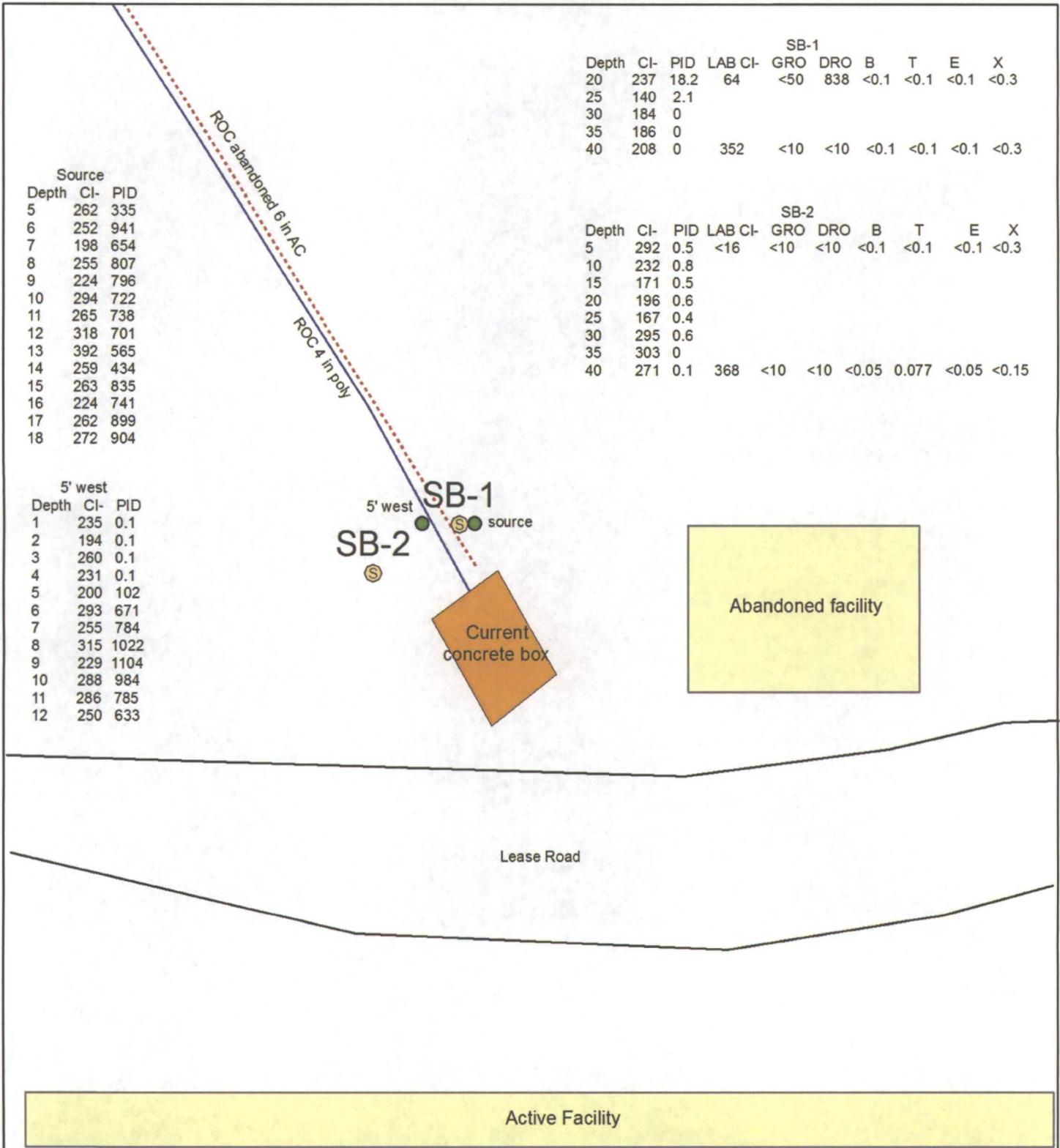
Case #: 1R427-179

Figure 1



Drawing date: 11-15-10
Drafted by: L. Weinheimer

Junction box and soil bore information



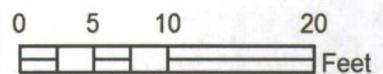
EME B-21 boot

Legals: UL/B sec. 21
T20S R37E

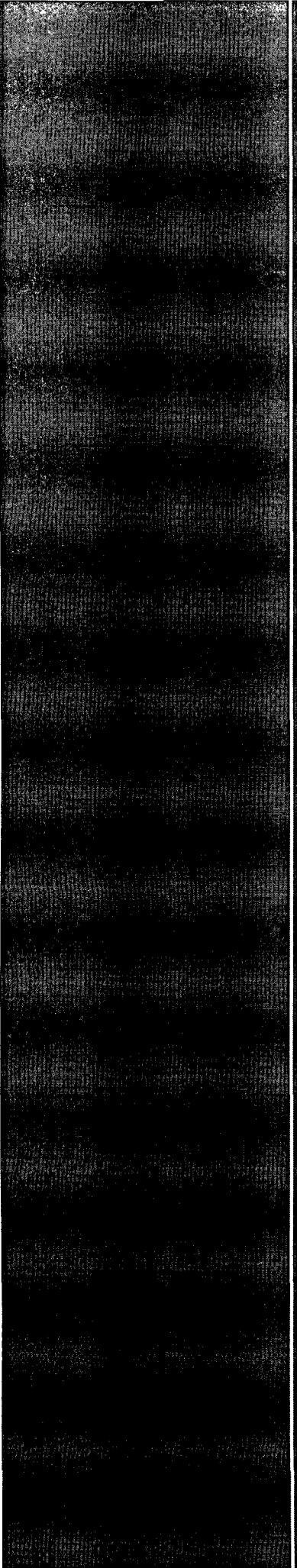
Case #: 1R427-179

Figure 2

● Junction box delineation trench



Drawing date: 11-15-10
Drafted by: L. Weinheimer



Appendix A

Soil bore installation and laboratory confirmation

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

November 01, 2010

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

RE: EME B-21 BOOT

Enclosed are the results of analyses for samples received by the laboratory on 10/22/10 7:58.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

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

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

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

Received: 10/22/2010
 Reported: 11/01/2010
 Project Name: EME B-21 BOOT
 Project Number: NONE GIVEN
 Project Location: EME B-21 BOOT

Sampling Date: 10/21/2010
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: SB #1 @ 20' (H021120-01)

BTEX 8260B		mg/kg		Analyzed By: CMS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.100	0.100	10/27/2010	ND	1.00	100	1.00			
Toluene*	<0.100	0.100	10/27/2010	ND	0.970	97.0	1.00			
Ethylbenzene*	<0.100	0.100	10/27/2010	ND	1.04	104	1.00			
Total Xylenes*	<0.300	0.300	10/27/2010	ND	3.09	103	3.00			

Surrogate: Dibromofluoromethane 90.4 % 80-120
 Surrogate: Toluene-d8 87.3 % 80-120
 Surrogate: 4-Bromofluorobenzene 100 % 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/22/2010	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: AB							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<50.0	50.0	10/22/2010	ND	211	105	200	6.63			
DRO >C10-C28	838	50.0	10/22/2010	ND	180	90.2	200	5.39			

Surrogate: 1-Chlorooctane 21.9 % 70-130
 Surrogate: 1-Chlorooctadecane 21.0 % 70-130

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 10/22/2010
 Reported: 11/01/2010
 Project Name: EME B-21 BOOT
 Project Number: NONE GIVEN
 Project Location: EME B-21 BOOT

Sampling Date: 10/21/2010
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: SB #1 @ 40' (H021120-02)

BTEX 82608		mg/kg		Analyzed By: CMS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.100	0.100	10/27/2010	ND	1.00	100	1.00			
Toluene*	<0.100	0.100	10/27/2010	ND	0.970	97.0	1.00			
Ethylbenzene*	<0.100	0.100	10/27/2010	ND	1.04	104	1.00			
Total Xylenes*	<0.300	0.300	10/27/2010	ND	3.09	103	3.00			

Surrogate: Dibromofluoromethane 86.0 % 80-120
 Surrogate: Toluene-d8 88.8 % 80-120
 Surrogate: 4-Bromofluorobenzene 104 % 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	10/22/2010	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/22/2010	ND	211	105	200	6.63		
DRO >C10-C28	<10.0	10.0	10/22/2010	ND	180	90.2	200	5.39		

Surrogate: 1-Chlorooctane 101 % 70-130
 Surrogate: 1-Chlorooctadecane 98.3 % 70-130

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Analytical Results For:

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

Received:	10/22/2010	Sampling Date:	10/21/2010
Reported:	11/01/2010	Sampling Type:	Soil
Project Name:	EME B-21 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EME B-21 BOOT		

Sample ID: SB #2 @ 5' (H021120-03)

BTEX 8260B		mg/kg		Analyzed By: CMS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.100	0.100	10/27/2010	ND	1.00	100	1.00			
Toluene*	<0.100	0.100	10/27/2010	ND	0.970	97.0	1.00			
Ethylbenzene*	<0.100	0.100	10/27/2010	ND	1.04	104	1.00			
Total Xylenes*	<0.300	0.300	10/27/2010	ND	3.09	103	3.00			

Surrogate: Dibromofluoromethane 88.4 % 80-120

Surrogate: Toluene-d8 93.3 % 80-120

Surrogate: 4-Bromofluorobenzene 96.1 % 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/22/2010	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/22/2010	ND	211	105	200	6.63		
DRO >C10-C28	<10.0	10.0	10/22/2010	ND	180	90.2	200	5.39		

Surrogate: 1-Chlorooctane 102 % 70-130

Surrogate: 1-Chlorooctadecane 99.0 % 70-130

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	10/22/2010	Sampling Date:	10/21/2010
Reported:	11/01/2010	Sampling Type:	Soil
Project Name:	EME B-21 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EME B-21 BOOT		

Sample ID: SB #2 @ 40' (H021120-04)

BTEX 8021B		mg/kg		Analyzed By: cms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/29/2010	ND	2.05	102	2.00			
Toluene*	0.077	0.050	10/29/2010	ND	1.85	92.4	2.00			
Ethylbenzene*	<0.050	0.050	10/29/2010	ND	1.75	87.3	2.00			
Total Xylenes*	<0.150	0.150	10/29/2010	ND	5.25	87.4	6.00			

Surrogate: 4-Bromofluorobenzene (PIL) 92.4 % 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	368	16.0	10/22/2010	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/22/2010	ND	211	105	200	6.63		
DRO >C10-C28	<10.0	10.0	10/22/2010	ND	180	90.2	200	5.39		

Surrogate: 1-Chlorooctane 90.8 % 70-130

Surrogate: 1-Chlorooctadecane 89.7 % 70-130

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

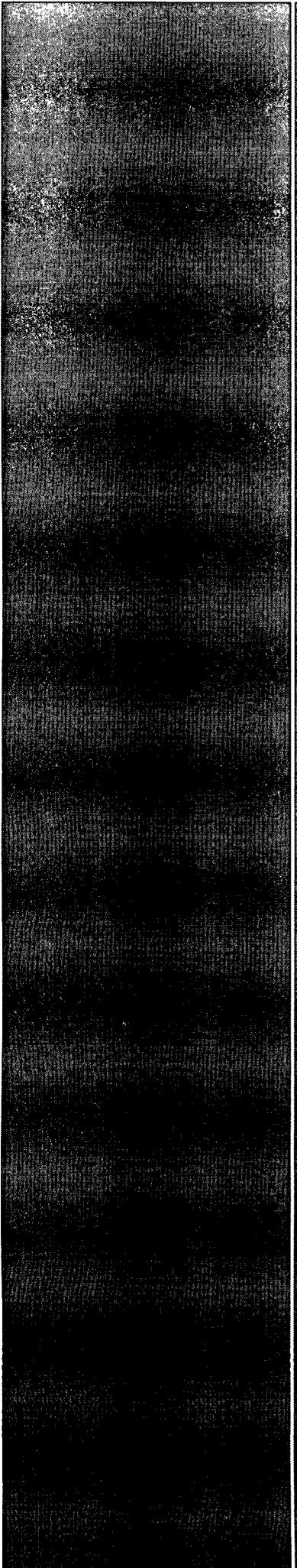
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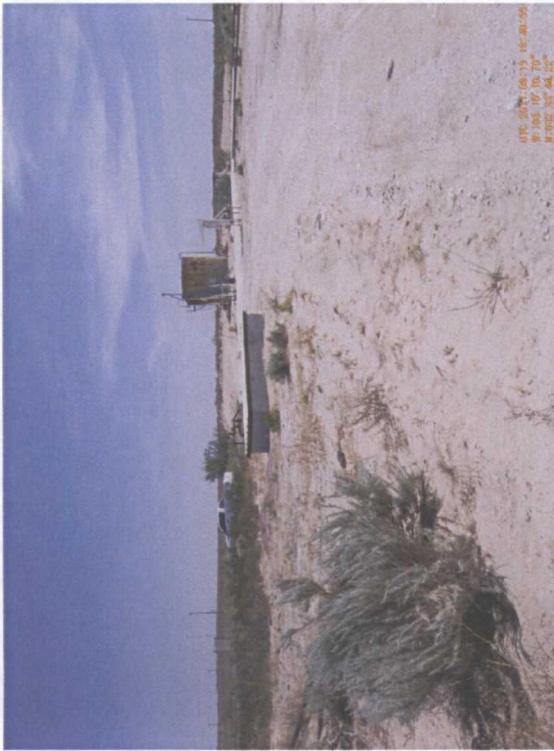
Celey D. Keene, Lab Director/Quality Manager



Appendix B

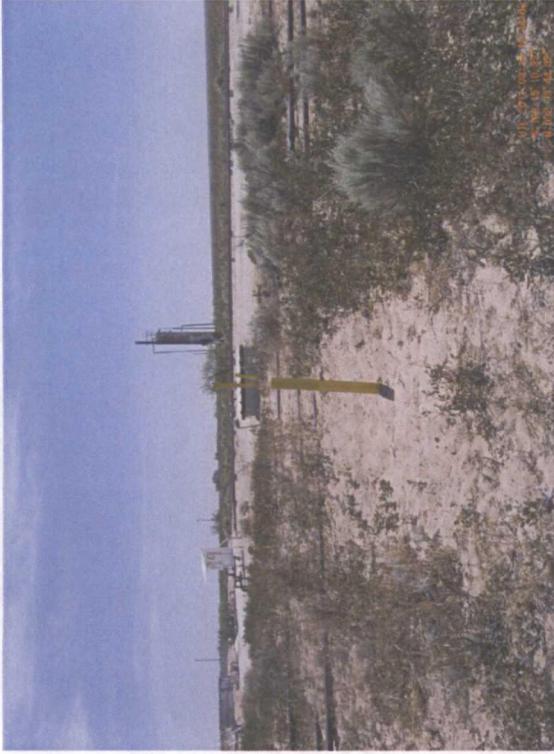
Site photos

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293



Site photo, facing east

8/19/11



Site photo, facing south

8/19/11



Site photo, facing north

8/19/11



Site photo, facing west

8/19/11