1R - 427-316

REPORTS

DATE:

7-19-12

Rice Environmental Consulting & Safety
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CERTIFIED MAIL
RETURN RECEIPT NO. 7007 2560 0003 0323 9070

July 19th, 2012

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: **CAP Report for Groundwater and Termination Request**
Rice Operating Company – EME SWD System
EME Jct. K-8-1 (1R427-316): UL/K sec. 8 T20S R37E
(formerly EME Jct. N-8-1)

Mr. Hansen:

RICE Operating Company (ROC) has retained Rice Environmental Consulting and Safety (RECS) to address 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 ownership/usage basis.

The site was previously referred to as the EME Jct. N-8-1. However, GIS mapping shows the site to be located within unit letter K. To reflect the geographical location of the site, the name has been changed to the EME Jct. K-8-1. All correspondences reference EME Jct. K-8-1.

Background and Previous Work

The site is located approximately 3 miles south of Monument, New Mexico at UL/K sec. 8 T20S R37E as shown on the Site Location Map (Figure 1). Monitor well sampling at the site indicates that groundwater is located at 27 ft.

In 2009, ROC initiated work on the former EME K-8-1 junction box. The site was delineated using a backhoe to form a 30 ft x 20 ft x 12 ft deep excavation and soil samples were screened at regular intervals for both hydrocarbons and chlorides. From the excavation, the four-wall composite, the bottom composite and the backfill were taken to a commercial laboratory for analysis. Laboratory tests of the four-wall composite showed a chloride reading of 256 mg/kg, a gasoline range organics (GRO) reading of non-detect and a diesel range organics (DRO) reading of 489 mg/kg. The bottom composite showed a chloride laboratory reading of 208 mg/kg, a GRO reading of non-detect and a DRO reading of 349 mg/kg. Clean soil was imported to the site,

blended with soil from the excavation and backfilled into the excavation. Laboratory analysis of the blended backfill showed a chloride reading of 144 mg/kg, a GRO reading of non-detect and a DRO reading of 232 mg/kg. To further investigate the site, a soil bore was advanced on November 12th, 2009, 25 feet south of the source. The boring was advanced to 24 ft bgs and samples were taken every two feet. The samples were field tested for both chlorides and hydrocarbons. The 18 ft and 24 ft samples were taken to a commercial laboratory to be analyzed. Both samples showed negligible chloride readings. However, GRO and DRO were slightly elevated in both samples and while benzene was non-detect in both samples, toluene, ethyl-benzene, and total xylenes were detected. The bore hole was plugged with bentonite to the ground surface.

The area was contoured to the surrounding landscape, seeded, 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 December 18th, 2009, and a junction box disclosure report was submitted to NMOCD with all the 2009 junction box closures and disclosures.

As part of the Investigation and Characterization Plan approved by NMOCD on May 19th, 2011, five soil bores (SB-2 through SB-6) were advanced through the former junction box site on May 24th, 2011. RECS personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID) for hydrocarbons. Representative samples from the bores were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers. Laboratory readings showed chloride numbers ranging from a high of 1,420 mg/kg at 6 ft bgs in SB-3 to a low of 240 mg/kg at 24 ft bgs in SB-2. Laboratory readings for GRO showed non-detect in all soil bores except in SB-2 at 21 ft bgs, where the GRO reading was 78.5 mg/kg. DRO readings ranged from a high of 1,110 mg/kg at 3 ft bgs in SB-2 to a low of non-detect at 6 ft bgs in SB-3, at the surface and 6 ft bgs in SB-4, and throughout SB-5. SB-2 at 21 ft and 24 ft bgs and SB-6 at 21 ft and 24 ft bgs had PID readings over 100 ppm and were taken to a commercial laboratory for BTEX analysis. Laboratory analysis showed benzene readings from both soil bores to be non-detect. However, toluene readings ranged from a high of 0.45 mg/kg at 21 ft in SB-2 to a low of 0.274 mg/kg at 24 ft in SB-6. Ethyl-benzene ranged from a high of 0.796 mg/kg at 21 ft bgs in SB-6 to a low of 0.29 mg/kg at 24 ft in SB-2. Finally, total xylenes ranged from a high of 5.54 mg/kg at 21 ft bgs in SB-6 to a low of 1.83 mg/kg at 24 ft bgs in SB-2.

On July 6th, 2011, surface samples were collected from a point 5 ft beyond SB-2, SB-3, and SB-4. Field screening of the 35 ft south surface sample yielded a chloride concentration of 59 mg/kg and a PID reading of 0.0 ppm. The 17 ft west surface sample yielded a chloride concentration of 454 mg/kg and a PID reading of 0.0 ppm, and the 19 ft north surface sample yielded a chloride concentration of 89 mg/kg and a PID reading of 0.0 ppm.

On July 15th, 2011, ROC submitted an ICP Report and Corrective Action Plan (CAP) to NMOCD which was approved on August 18th, 2011. As part of the approved CAP, RECS personnel were on site beginning October 3rd, 2011 to excavate for liner

installation. The site was excavated to approximately 42 ft x 58 ft and a 20-mil reinforced plastic liner was installed and properly seated at approximately 4.5 ft bgs. Since the site is located next to a lease road and lease pad, the site was topped with 6 inches of imported caliche and seeding was not required.

On August 29th, 2011, RECS personnel were on site to install the near-source and up gradient monitor wells. The up gradient monitor well, MW-2, was field tested for chlorides and screened in the field for hydrocarbons. Two samples from MW-2 were taken to a commercial laboratory for confirmation of field numbers. Laboratory readings for the 15 ft sampled returned a chloride result of 464 mg/kg and GRO and DRO readings of non-detect. Laboratory readings for the 25 ft sample returned a chloride reading of 192 mg/kg and GRO and DRO readings of non-detect. These laboratory chloride and hydrocarbon numbers accurately reflect background soil concentrations near the site.

A Corrective Action Plan Report on the Vadose Zone Remediation was submitted to NMOCD on December 16th, 2011 and approved on December 21st, 2011. As part of the plan, RECS recommended that the monitor wells be sampled two more quarters prior to submitting a remedy for groundwater to provide ROC time to accurately delineate groundwater quality.

Since their installation, the monitor wells have been sampled quarterly (Figure 2). During the most recent sampling date on May 15th, 2012, MW-2, the up gradient monitor well, had a chloride reading of 670 mg/L and MW-1, the near-source well, had a chloride reading of 780 mg/L (Appendix A). It is evident that although the site is in a regionally impacted chloride area, the chlorides in the vadose zone have contributed slightly to the degradation of groundwater beneath the site.

On June 13th, 2012, ROC submitted a Corrective Action Plan (CAP) for Groundwater, which was approved by NMOCD on July 11th, 2012. In the CAP, ROC proposed to remove chloride impacted groundwater from the existing groundwater recovery system located at EME A-20. Removed water would be used for pipeline and well maintenance. Our estimate conservatively reflected the net impact to groundwater at the site resulting from the former junction box site. It did not take into account other sources or regional conditions that may exist up gradient of the site.

The total chloride mass in the groundwater was determined to be 109 kg and it was estimated that the EME A-20 recovery system would require approximately 14 days to extract 198 barrels of groundwater equating to the 109 kg.

ROC submitted an Addendum and Groundwater Notification on June 22nd, 2012. The Addendum stated that upon NMOCD approval, MW-1 the near-source well, would be plugged and abandoned using a 1-3% bentonite/concrete slurry and a three foot concrete cap. MW-2, the up gradient, will continue to be sampled on a yearly basis.

Groundwater Remedy

Groundwater recovery began at the EME A-20 on June 21st, 2012 and was completed on June 26th, 2012. During the recovery process, a total of 240 barrels of groundwater was extracted from the aquifer. Given that RW-1 at EME A-20 had a chloride concentration of 3,700 mg/L (Appendix B), the 240 barrels equates to 141 kg of chloride extracted from the aquifer.

MW-1, the near source well, was plugged and abandoned with a 1-3% bentonite/concrete slurry and a three foot concrete cap on July 12th, 2012 (Appendix C). MW-2, the up gradient monitor well, remains in place to monitor the regional impact and will be sampled on a yearly basis.

ROC has completed all the corrective actions as approved by NMOCD in the CAPs by installing and properly seating a 20-mil reinforced poly liner measuring 42 ft x 58 ft and by removing the necessary 109 kg of chlorides the site contributed to groundwater. Therefore, ROC requests 'remediation termination' status of the regulatory file.

RECS 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,

Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

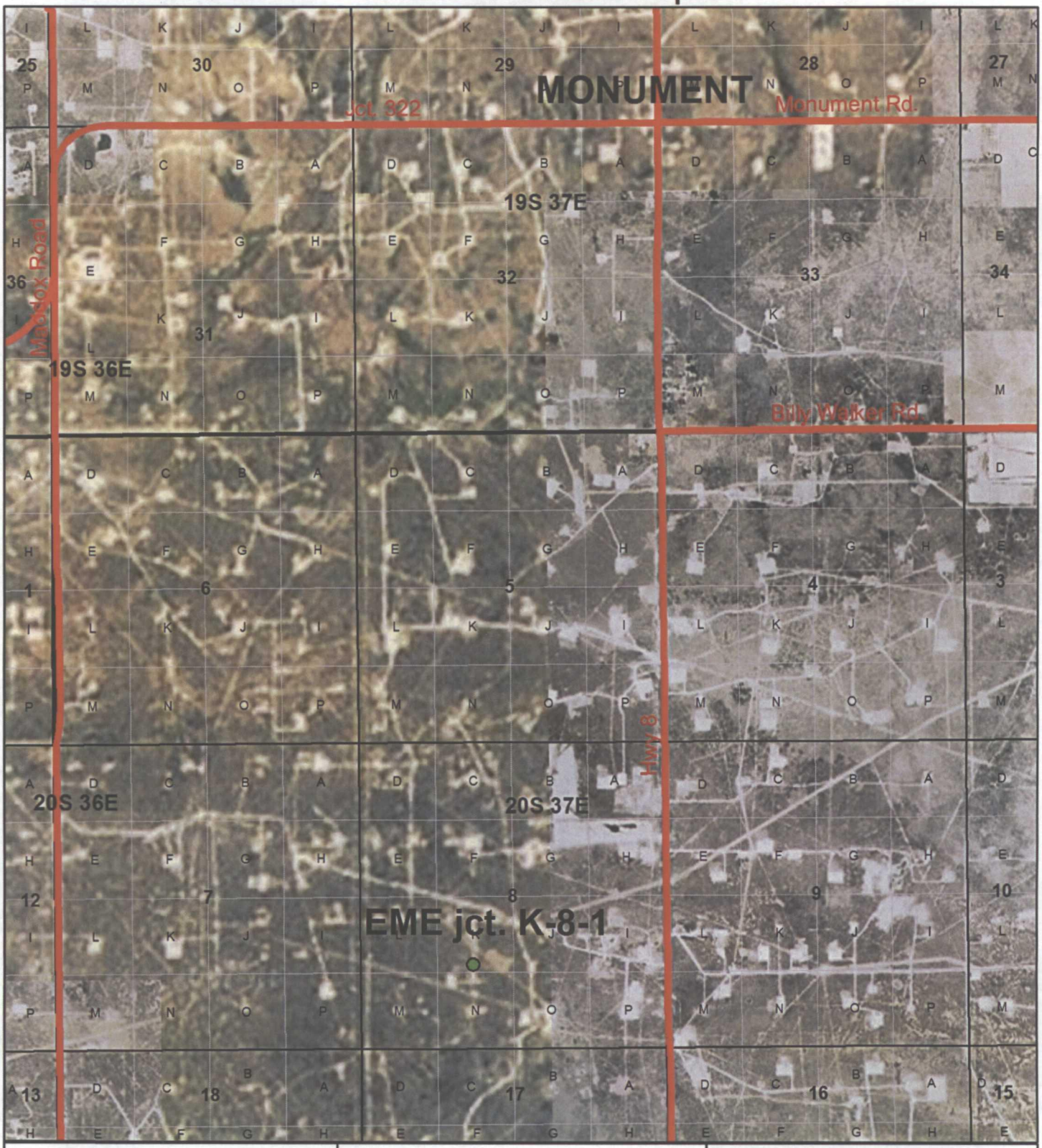
Attachments:

- Figure 1 – Site Location Map
- Figure 2 – MW Sampling Data
- Appendix A – MW Sampling Lab
- Appendix B – EME A-20 RW-1 Sampling Lab
- Appendix C – Plug and Abandon MW-1 Documentation

Figures

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

Site Location Map



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

EME jct. K-8-1

LEGALS: UL/K sec. 8
T20S R37E

NMOCD Case#: 1R427-316

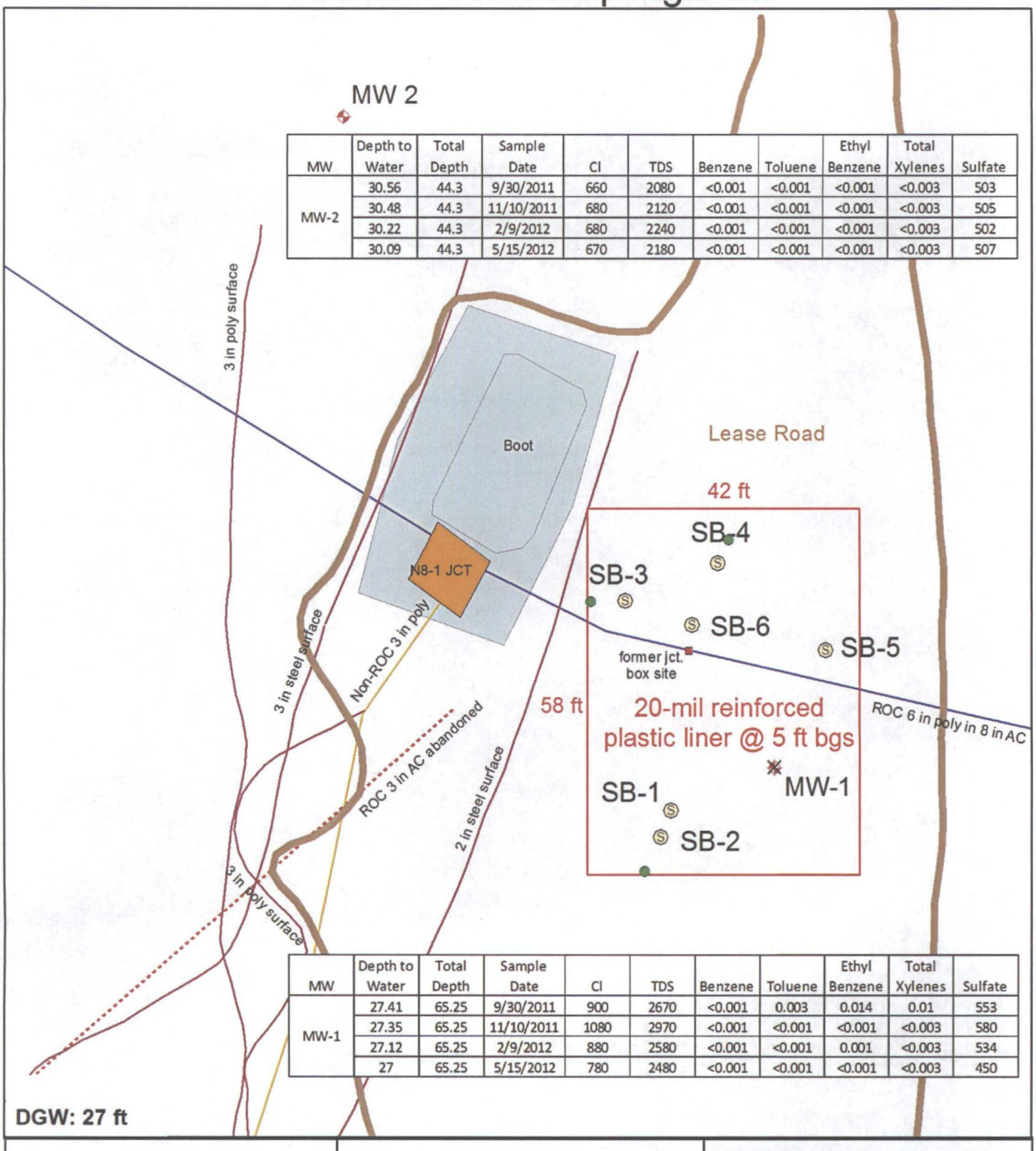
Figure 1

N
W E
S

0 0.375 0.75
Miles

Drawing date: 6-4-12
Drafted by: L. Weinheimer

Monitor Well Sampling Data



MW	Depth to Water	Total Depth	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
MW-2	30.56	44.3	9/30/2011	660	2080	<0.001	<0.001	<0.001	<0.003	503
	30.48	44.3	11/10/2011	680	2120	<0.001	<0.001	<0.001	<0.003	505
	30.22	44.3	2/9/2012	680	2240	<0.001	<0.001	<0.001	<0.003	502
	30.09	44.3	5/15/2012	670	2180	<0.001	<0.001	<0.001	<0.003	507

MW	Depth to Water	Total Depth	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
MW-1	27.41	65.25	9/30/2011	900	2670	<0.001	0.003	0.014	0.01	553
	27.35	65.25	11/10/2011	1080	2970	<0.001	<0.001	<0.001	<0.003	580
	27.12	65.25	2/9/2012	880	2580	<0.001	<0.001	0.001	<0.003	534
	27	65.25	5/15/2012	780	2480	<0.001	<0.001	<0.001	<0.003	450

RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

EME jct. K-8-1

LEGALS: UL/K sec. 8
T20S R37E

NMOCD Case#: 1R427-316

Figure 2

N W E S

Surface Samples

0 10 20 40 Feet

Drawing date: 6-4-12
Drafted by: L. Weinheimer

Appendix A

MW Sampling Lab

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

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 22, 2012

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JCT K-8-1

Enclosed are the results of analyses for samples received by the laboratory on 05/18/12 14:31.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated 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 (V1, 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	05/18/2012	Sampling Date:	05/15/2012
Reported:	05/22/2012	Sampling Type:	Water
Project Name:	EME JCT K-8-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T20S-R37E-SEC8 K-LEA CTY., NM		

Sample ID: MONITOR WELL #1 (H201119-01)

BTEX 8021B mg/L Analyzed By: ZZZ

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	05/21/2012	ND	0.046	92.0	0.0500	0.455	
Toluene*	<0.001	0.001	05/21/2012	ND	0.055	110	0.0500	0.657	
Ethylbenzene*	<0.001	0.001	05/21/2012	ND	0.059	117	0.0500	1.38	
Total Xylenes*	<0.003	0.003	05/21/2012	ND	0.179	119	0.150	1.96	

Surrogate: 4-Bromofluorobenzene (PID *115 %* *70.7-118*

Chloride, SM4500Cl-B mg/L Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**780**	4.00	05/21/2012	ND	100	100	100	3.92	

Sulfate 375.4 mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**450**	10.0	05/22/2012	ND	23.4	117	20.0	3.70	

TDS 160.1 mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**2480**	5.00	05/21/2012	ND	238	99.2	240	1.59	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	05/18/2012	Sampling Date:	05/15/2012
Reported:	05/22/2012	Sampling Type:	Water
Project Name:	EME JCT K-8-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T20S-R37E-SEC8 K-LEA CTY., NM		

Sample ID: MONITOR WELL #2 (H201119-02)

BTEX 8021B mg/L Analyzed By: ZZZ

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	05/21/2012	ND	0.046	92.0	0.0500	0.455	
Toluene*	<0.001	0.001	05/21/2012	ND	0.055	110	0.0500	0.657	
Ethylbenzene*	<0.001	0.001	05/21/2012	ND	0.059	117	0.0500	1.38	
Total Xylenes*	<0.003	0.003	05/21/2012	ND	0.179	119	0.150	1.96	

Surrogate: 4-Bromofluorobenzene (PID *108 %* *70.7-118*

Chloride, SM4500Cl-B mg/L Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**670**	4.00	05/21/2012	ND	100	100	100	3.92	

Sulfate 375.4 mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**507**	10.0	05/22/2012	ND	23.4	117	20.0	3.70	

TDS 160.1 mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**2180**	5.00	05/21/2012	ND	238	99.2	240	1.59	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, New Mexico 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name:	BILL TO Company:	PO#
RICE Operating Company	RICE Operating Company	
Project Manager:	**Address:** (Street, City, Zip)	
Hack Conder	122 W Taylor Street ~ Hobbs, New Mexico 88240	
Address: (Street, City, Zip)	**Phone#:**	**Fax#:**
122 W Taylor Street ~ Hobbs, New Mexico 88240	(575) 393-9174	(575)397-1471
Phone #:	**Fax #:**	
(575) 393-9174	(575)397-1471	
Project #:	**Project Name:**	
	EME Junction K-8-1	
Project Location:	**Sampler Signature:** ~ Rozanne Johnson (575)631-9310	
T20S-R37E-Sec8 K ~ Lea County New Mexico	rozanne@valornet.com	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY) H201119	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2012)	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
1	Monitor Well #1	G	3	X				2				1		5-15	12:15		X																X	X	X	
2	Monitor Well #2	G	3	X				2				1		5-15	9:40		X																X	X	X	

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Rozanne Johnson	5-18-2012	14:30	Jodi Henson	5/18/12	14:31
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:

Phone Results	Yes	No
Fax Results	Yes	No Additional Fax Number:

REMARKS:

Email Results: hconder@riceswd.com
lweinheimer@rice-ecs.com
klones@riceswd.com
rozanne@valornet.com

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other:	Cool: Yes / No — Intact: Yes / No	(Initials)

#26

Appendix B

EME A-20 RW-1 Sampling Lab

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

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

June 26, 2012

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME A-20

Enclosed are the results of analyses for samples received by the laboratory on 06/21/12 15:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated 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 (V1, 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/21/2012	Sampling Date:	06/21/2012
Reported:	06/26/2012	Sampling Type:	Water
Project Name:	EME A-20	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EME A-20		

Sample ID: RW-1 (H201414-01)

Chloride, SM4500Cl-B **mg/L** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**3700**	4.00	06/26/2012	ND	100	100	100	11.3	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name:	BILL TO
Project Manager: Hack Conder	P.O. #:
Address:	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location: EME A-20	Phone #:
Sampler Name: Kyle Norman	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS						
H201414																										
-1	RW-1	G	1	X									6-2-12	10:30	X											

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 6-2-12	Received By: Jodi Henson	Phone Result: ☐ Yes ☑ No Add'l Phone #:
	Time: 3:45		Fax Result: ☐ Yes ☑ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: email results: zconder@rice-ecs.com Knorman@rice-ecs.com; lpena@riceswd.com Kjones@riceswd.com; Bbaker@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☐ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)	

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

#26

Appendix C

Plug and Abandon MW-1 Documentation

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

HARRISON & COOPER, INC.

Drilling & Pump Professionals

7414 85th Street, Lubbock, Texas 79424-4951

P.O. Box 96, Wolfforth, Texas 79382-0096

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Plugging Report

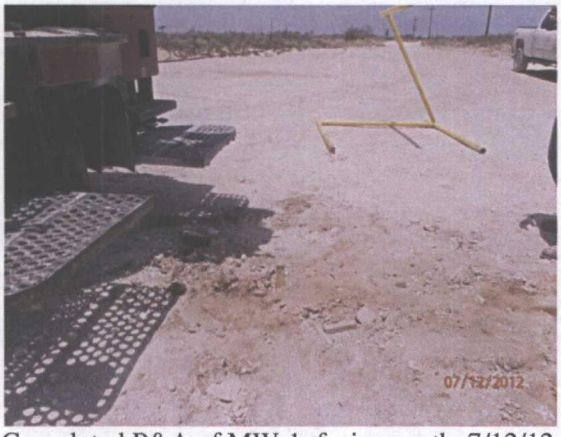
Client	Rice Operating
Contractor	Harrison & Cooper
Date Completed	7/12/2012
Site	EME Jct. K-8-1
Well ID	MW-1
Casing Diameter	4"
Well Depth	64'
Casing Material	PVC
Plugging Material	Portland/Bentonite Slurry
Slurry Interval	3'-64'
Cement Interval	0'-3'

Copies: File
Email (Rice)

EME Jct. K-8-1
Unit Letter K, Section 8, T-20-S, R-37-E

Pulling MW-1, facing south 7/12/12

Pouring the 1-3% bentonite/concrete slurry into bore hole, facing north 7/12/12



Completed P&A of MW-1, facing north 7/12/12