1R - 426-04

REPORTS

DATE:

6-27-13

Rice Environmental Consulting & Safety
P.O. Box 2948, Hobbs, NM 88241
Phone 575.393.2967

RECEIVED OCD
2013 JUL -1 P 2:18

CERTIFIED MAIL
RETURN RECEIPT NO. 7008 1140 0001 3072 4994

June 27th, 2013

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 and Termination Request**
Rice Operating Company – BD SWD System
BD M-26-1 (1R426-04): UL/M sec. 26 T21S R37E

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 BD Salt Water Disposal (SWD) system. ROC is the service provider (agent) for the BD 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 is located approximately 1 mile northeast of Eunice, New Mexico at UL/M sec. 26 T21S R37E as shown on the Site Location Map (Figure 1). Groundwater sampling at the site indicated that groundwater is located at 46 ft bgs.

Background and Previous Work

In 2003, ROC initiated work on the former BD M-26-1 junction box. The site was delineated using a backhoe to form a 30 ft x 30 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 remediated backfill were taken to a commercial laboratory for analysis. Laboratory tests of the four-wall composite showed a chloride reading of 1,900 mg/kg, negligible gasoline range organics (GRO) and diesel range organics (DRO), and negligible BTEX. The bottom composite showed a chloride laboratory reading of 851 mg/kg, a GRO reading of 114 mg/kg, and a DRO reading of 867 mg/kg. BTEX for the bottom composite showed negligible benzene and toluene, an ethyl benzene reading of 0.334 mg/kg, and a total xylenes reading of 0.674 mg/kg. A 20-mil poly liner was placed at the bottom of the excavation, and the excavated soil was blended on site and backfilled over the liner. Laboratory analysis of the remediated backfill showed a chloride reading of 248 mg/kg, a GRO reading of 26 mg/kg, and a DRO reading of 324 mg/kg. The BTEX reading for the backfill showed

negligible benzene, toluene, and ethyl benzene. Total xylenes showed a reading of 0.070 mg/kg.

The area was contoured to the surrounding landscape and seeded. NMOCD was notified of potential groundwater impact on March 17th, 2003, and a junction box disclosure report was submitted to NMOCD with all the 2003 junction box closures and disclosures.

As part of the Investigation and Characterization Plan (ICP) approved by NMOCD on May 19th, 2011, seven soil bores (SB-1 through SB-7) were advanced through the former junction box site on May 23rd, May 24th, and June 6th, 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. SB-1, SB-2 and SB-5 had low laboratory chloride readings which tapered off (below 250 mg/kg) prior to reaching the capillary fringe. SB-3, SB-4, SB-6 and SB-7 had laboratory chloride readings which indicated that chlorides may have affected the groundwater beneath the site. GRO readings in all seven bores were non-detect and DRO readings were low. On October 25th, 2011, a near-source monitor well was installed 18 ft southeast of the former junction box site to determine if groundwater beneath the site has been affected by residual chlorides. The monitor well was not sampled as it was installed.

On November 17th, 2011, a Report of Further Investigation was submitted to NMOCD, and was approved on November 22nd, 2011. In the report, RECS recommended that the monitor well be sampled quarterly to evaluate groundwater for possible chloride impacts from the site. If groundwater showed impact from residual chlorides, a groundwater remedy would be developed to address these concerns. If the monitor well indicated no impact to groundwater from the site, ROC would submit a Corrective Action Plan that would address the vadose zone only.

Two surface samples were taken 10 feet outside SB-6 and SB-7 on May 4th, 2012. The surface sample 10 feet east of SB-6 returned laboratory results of non-detect for chlorides, GRO and DRO. The surface sample 10 ft west of SB-7 showed a chloride laboratory reading of 48 mg/kg and GRO and DRO readings of non-detect.

A Corrective Action Plan (CAP) was submitted to NMOCD on May 18th, 2012, which was approved on June 27th, 2012. In the CAP, ROC proposed to excavate the site to the dimensions of 49 ft x 67 ft with the southwest corner angled to remain a safe distance from nearby pipelines and properly seat a 20-mil reinforced poly liner at approximately 5 ft bgs. The liner would provide a barrier that will inhibit the downward migration of chlorides to groundwater. The liner would cover the existing 20-mil poly liner measuring 30 ft x 30 ft installed at 12 ft bgs. The soils placed above the liner would have a laboratory chloride reading no greater than 500 mg/kg and a field PID reading below 100 ppm. Excavated soil would be evaluated for use as backfill and any soils requiring disposal will be properly disposed of at a NMOCD approved facility. Upon completion of backfilling, the site would be seeded with a native vegetative mix and soil amendments will be added as necessary. Vegetation above the liner would also provide a natural

infiltration barrier for the site since plants capture water through their roots thereby reducing the volume of water moving through the vadose zone to groundwater.

ROC proposed to plug and abandon the near-source monitor well with a 1-3% bentonite/concrete slurry and a three foot concrete cap. The monitor well had shown chloride readings below WQCC standards since its installation. It is evident from this data that the residual chlorides in the vadose zone have not impacted groundwater beneath the site.

On October 17th, 2012, RECS personnel were on site to supervise the plugging and abandonment of MW-1. The well was plugged with a 1-3% bentonite/concrete slurry and a three foot concrete cap. On November 20th, 2012, ROC submitted a Plug and Abandon Report of MW-1.

A CAP Addendum was submitted to NMOCD on May 13th, 2013 and approved on the same day. The Addendum changed the dimensions of the liner to accommodate an electrical pole anchor (Figure 2).

CAP Report on the Vadose Zone Remediation

RECS personnel were on site beginning on May 8th, 2013, to begin excavating for liner installation. The site was excavated as shown on Figure 2 to a depth of 5.5 ft. A total of 372 yards of excavated soil was disposed of at a NMOCD approved facility. The remaining excavated soil was blended on site and an 8 point composite sample was taken and field tested for hydrocarbons returning a result of 9 ppm. The sample was then taken to a commercial laboratory for analysis and returned a chloride result of 176 mg/kg. A total of 312 yards of blow sand was imported to the site and an 8 point composite sample was field tested for hydrocarbons returning a result of 16.1 ppm. The sample was then taken to a commercial laboratory, which returned a chloride result of non-detect.

The bottom of the excavation was padded with 6 inches of imported blow sand and a 20-mil reinforced poly liner was installed and properly seated into the excavation. The top of the liner was also padded with blow sand. The remainder of the excavation was backfilled with the blow sand and blended excavated soil. The surface of the excavation was contoured to the surrounding location.

A total of 36 yards of base coarse was imported to the site to repair the lease road. A sample of the base coarse was field tested for hydrocarbons and returned a result of 0 ppm. The sample was then taken to a commercial laboratory for analysis and returned a chloride result of 80 mg/kg.

Silt net fencing was placed around the excavation to prevent erosion and maintain seed integrity. Soil amendments were added to the soil and the site was seeded with a blend of native vegetation.

Documentation of these activities can be found in Appendix A.

Given that ROC has fulfilled the CAP requirements by installing the 20-mil poly liner as shown in Figure 2, ROC, respectfully requests 'remediation termination' or similar closure status of the site.

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

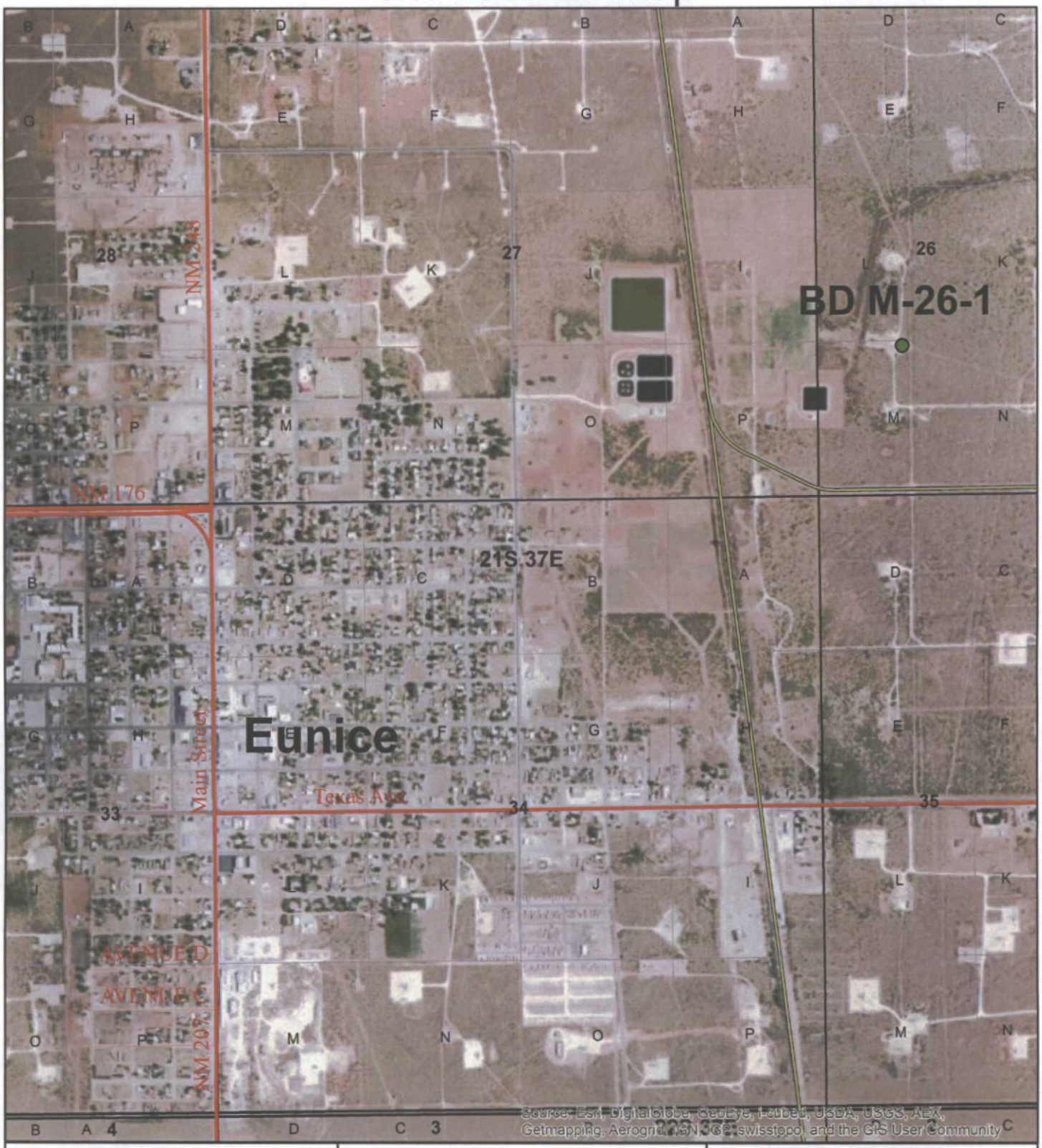
Attachments:

Figure 1 – Site Location Map
Figure 2 – NMOCD Approved Liner
Appendix A – Liner Installation Documentation

Figures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948, Hobbs, NM 88241
Phone 575.393.2967

Site Location Map



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

RECS

BD M-26-1

LEGALS: UL/M sec. 26
T21S R37E

NMOCD Case #: 1R426-04

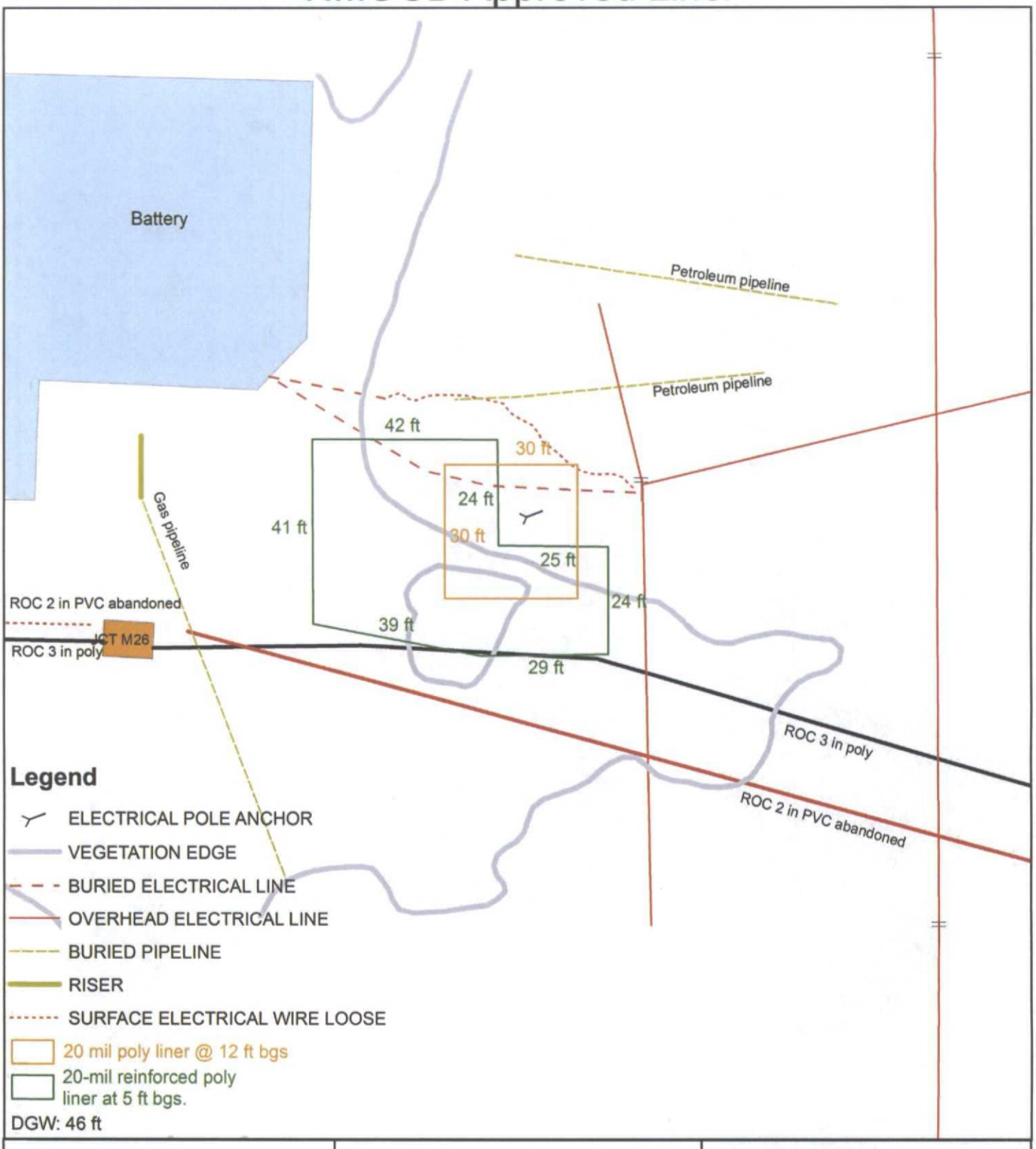
Figure 1

N
W E
S

0 0.175 0.35
Miles

Drawing date: 7-1-11
Drafted by: L. Weinheimer

NMOCD Approved Liner



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

BD M-26-1

LEGALS: UL/M sec. 26
T21S R37E

NMOCD Case #: 1R426-04

Figure 2

N W E S

0 10 20 40 Feet

Drawing date: 6/18/13
Drafted by: L. Weinheimer

Appendix A

Liner Installation Documentation

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471
PID METER CALIBRATION & FIELD REPORT FORM

CK. MODEL NO.	
	X

MODEL: PGM 7300 SERIAL NO: 590-000508
MODEL: PGM 7300 SERIAL NO: 590-000504
MODEL: PGM 7320 SERIAL NO: 592-903318
MODEL: PGM 7300 SERIAL NO: 590-000183

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR BALANCE

LOT NO: HAL-248-100-1	EXPIRATION DATE: 7/1/2015
METER READING ACCURACY: 100	

ACCURACY: +/- 2%

COMPANY
RICE OPERATING

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	M-26-1	M	26	T-21-S	R-37-E

SAMPLE ID	PID	SAMPLE ID	PID
8 PT. COMPOSITE BLENDED BACKFILL	9		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE: _____ DATE: 5/16/2013

CARDINAL Laboratories

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

May 22, 2013

Bruce Baker

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD M-26-1

Enclosed are the results of analyses for samples received by the laboratory on 05/17/13 8:50.

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

Received:	05/17/2013	Sampling Date:	05/16/2013
Reported:	05/22/2013	Sampling Type:	Soil
Project Name:	BD M-26-1	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC26 M ~ LEA CTY, NM		

Sample ID: 8 PT. COMP BLENDED BACKFILL (H301187-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	05/20/2013	ND	416	104	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326. FAX (575) 393-2476

Company Name:	RTCE Operating	BILL TO	
Project Manager:	Hack Conder	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location:	BDM-76-1	Phone #:	
Sampler Name:		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		
H30187															10	
1	6 pt. Composite Blended Bucks 11	C	1			1					1		5/16/13	2:45	1	

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Relinquished By:	Date: 5/17/13	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Time: 7:40 Date: 5.50	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
	Time:		REMARKS: Email All
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 (575) 393-2326

#54

RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

CK. MODEL NO.			
		MODEL: PGM 7300	SERIAL NO: 590-000508
		MODEL: PGM 7300	SERIAL NO: 590-000504
	X	MODEL: PGM 7320	SERIAL NO: 592-903318
		MODEL: PGM 7300	SERIAL NO: 590-000183

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: HAL-248-100-1	EXPIRATION DATE: 7/1/2015
METER READING ACCURACY: 100	

ACCURACY : +/- 2%

COMPANY
RICE OPERATING

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	M-26-1	M	26	T-21-S	R-37-E

SAMPLE ID	PID	SAMPLE ID	PID
BLOWSAND	16.1		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE: _____ DATE: 5/15/2013

CARDINAL Laboratories

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

May 21, 2013

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD M-26-1

Enclosed are the results of analyses for samples received by the laboratory on 05/15/13 16:43.

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:	05/15/2013	Sampling Date:	05/15/2013
Reported:	05/21/2013	Sampling Type:	Soil
Project Name:	BD M-26-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC26 M ~ LEA CTY, NM		

Sample ID: BLOWSAND (H301173-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	05/17/2013	ND	432	108	400	0.00	

Cardinal Laboratories *=Accredited Analyte

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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

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	RICE Operating	BILL TO	
Project Manager:	Mack Ender	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location:	BD M-26-1 SCT	Phone #:	
Sampler Name:		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	C-1
H30173 -1	Blowsand	C	1			1					1		5/15/13	4:10	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: 5/15/13	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Time: 4:43	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
	Date:		REMARKS: Email All
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool ☐ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) JH

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#64

RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

CK. MODEL NO.		MODEL: PGM 7300	SERIAL NO: 590-000508
		MODEL: PGM 7300	SERIAL NO: 590-000504
	X	MODEL: PGM 7320	SERIAL NO: 592-903318
		MODEL: PGM 7300	SERIAL NO: 590-000183

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: HAL-248-100-1	EXPIRATION DATE: 7/1/2015
METER READING ACCURACY: 100	

ACCURACY: +/- 2%

COMPANY
RICE OPERATING

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
"BD"	M-26-1	M	26	T-21-S	R-37-E

SAMPLE ID	PID	SAMPLE ID	PID
BASE COARSE	0		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE: _____ DATE: 5/24/2013

CARDINAL Laboratories

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

June 18, 2013

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD M-26-1

Enclosed are the results of analyses for samples received by the laboratory on 06/17/13 16:15.

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:	06/17/2013	Sampling Date:	06/17/2013
Reported:	06/18/2013	Sampling Type:	Soil
Project Name:	BD M-26-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC26 M ~ LEA CTY, NM		

Sample ID: BASE COARSE (H301394-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	06/18/2013	ND	432	108	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL LABORATORIES

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(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: RICE Operating	BILL TO
Project Manager: Hack Conder	P.O. #:
Address: 419 W. Cain	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location: BDM-26-1	Phone #:
Sampler Name: Dylan Yarbrough	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					
H30139-4																									
1	Base Course	G	1			X					X		6/17/13	3:45	✓										

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Relinquished By:	Date: 6/17/13	Received By: Jodi Henson	Phone Result: ☐ Yes ☑ No Add'l Phone #:
	Time: 4:15		Fax Result: ☐ Yes ☑ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: email results Zconder@rice-ecs.com; Bbaker@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; kjones@riceswd.com; Laura Pena, Kyle Norman dyarbrough@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

PO Box 5630
Hobbs, NM 88241
Phone: (575) 393-4411
Fax: (575) 393-0293

REVEGETATION FORM

1. General Information

Site name: BD M-26-1						
U/L M	Section 26	Township T-21-R	Range R-37-E	County Lea	Latitude N 32*26.756'	Longitude W103*08.380"
Contact Name: Hack Conder						
Email: hconder@rice-ecs.com						
Site size: 70'x105' 7,500 square feet				Map detail of site attached ☐		
Additional information:						

2. Soils **Do not rip caliche subsoils; caliche rocks brought to the surface by ripping shall be removed.*

Salvaged from site ☐	Bioremediated ☐	Imported ☒	Blended ☒	Depth (in):
Texture: Sandy	Describe soil & subsoil:	Blended sand and Top soil.		
Soil prep methods:	Rip ☐ Depth(in):	Disc ☒ Depth (in): 3"	Rollerpack ☐	
Date completed: 5/24/2013				

3. Bioremediation

Fertilizer ☐	Hay ☐	Other ☒ 12 Bags of Restore
Type:		Describe: Nhance, 2 Bags of Manure 6 Bags of Potting Mix
Lbs/acre:		

4. Seeding **Attach seed bag tags to this form. Seed bag tags shall contain the site name and S-T-R.*

Custom seed mix ☒	Prescribed mix ☐	Seed mix name: 10 lbs. Lea County Mix, 10 lbs. Race Horse Oats, 10 lbs. Sudan Grass	Seeding date: 5/29/2013
Broadcast ☒ Method: Mechanical Seeder			
Soil conditions during seeding: Dry ☒ Damp ☐ Wet ☐			
Photos attached ☐ Number of photos:	Observations: The Seed was disc into the soil.		

5. Certification I hereby certify that the information in this form and attachments is true and complete to the best of my knowledge and belief.

Name: Kyle Norman	Title: Environmental Tech	Date: 5/29/2013
Signature: Kyle Norman		

BD M-26-1 (1R426-04)
Unit Letter M, Section 26, T21S, R37E

site prior, facing east 5/13/2013

importing blow sand, facing north 5/14/2013

excavating the site, facing west 5/15/2013

exporting excavated soil to Sundance for disposal, facing west 5/15/2013

padding the completed excavation with 6 inches of blow sand, facing east 5/17/2013

20-mil, reinforced liner installed at approximately 5 ft bgs, facing northwest 5/17/2013

padding the liner with blow sand, facing north 5/17/2013

importing blow sand to contour the site to the surrounding area, facing east 5/23/2013

repairing the lease road, facing east 5/24/2013

spreading amendments, facing north 5/29/2013

seeding the backfilled site, facing east 5/29/2013

site complete, facing east 5/29/2013