1RP-425-37

Approval
&
Soil Closure

DATE:
03.28.14 (Approval)
02.10.14 (Report)

From: Lowe, Leonard, EMNRD
To: "Hack Conder (hconder@riceswd.com)"
Cc: "Katie Jones"
Subject: Closure Approved (1R-425-37) - Vacuum F-33 Boot
Date: Friday, March 28, 2014 3:04:00 PM
Importance: High

Soil Closure Approved
for the Vacuum F-33 Boot (1R425-37)
Unit Letter F Section 33, T17S, R35E, NMPM, Lea County, New Mexico

Dear Mr. Conder:

The New Mexico Oil Conservation Division (OCD) has received RICE Environmental 's Initial CAP report and Soil Closure Request for the above-referenced site, dated February 10, 2014. The Soil Closure report is acceptable to the OCD.

The above-referenced report, submitted in accordance with 19.15.29 NMAC (Rule 29; formally, Rule 116), indicates that RICE has met the requirements of 19.15.29 NMAC; therefore, the OCD approves the report and hereby notifies you that the soil remediation portion (1R-425-37) is closed in accordance with 19.15.29 NMAC.

Please be advised that OCD approval of this report does not relieve the owner/operator of responsibility should operations pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the owner/operator of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

If you have any questions regarding this matter, please contact me at 505-476-3492.

llowe

Leonard Lowe
Environmental Engineer
[Environmental Bureau]
Oil **C**onservation **D**ivision/**E**nergy **M**inerals and **N**atural **R**esources **D**epartment
1220 South St. Frances
Santa Fe, New Mexico 87004
Office: 505-476-3492
E-mail: leonard.lowe@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

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

February 10, 2014

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

RE: **Initial CAP Report and Soil Closure Request**
Rice Operating Company – Vacuum SWD System
Vacuum F-33 boot (1R425-37): UL/F sec. 33 T17S R35E

Mr. Lowe:

RICE Operating Company (ROC) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site in the abandoned Vacuum Salt Water Disposal (SWD) system.

ROC is the service provider (agent) for the Vacuum 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.

Background and Previous Work

The site is located approximately 2.5 miles east of Buckeye, New Mexico at UL/F sec. 33 T17S R35E as shown on the Site Location Map (Figure 1). Monitor well sampling at the site indicates that groundwater is located at 82 ft bgs.

In 2007, ROC initiated work on the former Vacuum F-33 boot 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, 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 2,260 mg/kg, a gasoline range organics (GRO) readings of 67.3 mg/kg and a diesel range organics (DRO) reading of 1,180 mg/kg. The sample was also submitted for BTEX analysis which returned results of non-detect for benzene, 0.128 mg/kg for toluene, 0.624 mg/kg for ethyl-benzene and 1.85 mg/kg for total xylenes. The bottom composite showed a chloride laboratory reading of 6,800 mg/kg, a GRO reading of 127 mg/kg and a DRO reading of 1,710 mg/kg. BTEX readings returned results of 0.012 mg/kg for benzene, 0.103 mg/kg for toluene, 0.096 mg/kg for ethyl benzene and 0.527 mg/kg for total xylenes. The excavated soil was blended on site and returned to the excavation. A sample of the backfill was taken to a commercial laboratory for analysis and returned results of 3,600 mg/kg for chlorides, a GRO concentration below detectable

limits and 1,700 mg/kg for DRO. 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 November 20th, 2007 and a junction box disclosure report was submitted to NMOCD with all the 2007 junction box closures and disclosures.

An Investigation and Characterization Plan (ICP) was submitted to NMOCD on March 17th, 2008 and was approved on May 21st, 2008. As part of the ICP, three soil bores and a monitor well were installed at the site on February 3rd and 4th, 2009. As the soil bores and monitor well were installed, sample were taken at regular intervals and field tested for chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for confirmatory chloride analysis. SB-1 and SB-2 were installed to 20 ft bgs. Laboratory analysis of SB-1 returned with a chloride value of 384 mg/kg at 5 ft bgs; however, field chloride levels dropped to a concentration of 222 mg/kg at 20 ft bgs. Laboratory analysis of SB-2 returned a chloride value of 1,860 mg/kg at 10 ft bgs; however, the chloride field values dropped as the bore was being advanced. SB-3, installed near the source, returned laboratory chloride readings of 4,400 mg/kg at 20 ft bgs and 5,760 mg/kg at 65 ft bgs. Field chloride levels remained high throughout the bore.

MW-1 was installed 35 feet down-gradient of the former junction box site. As the well was installed, field chloride levels dropped as the bore reached 60 ft bgs. Laboratory chloride readings showed chloride levels of 3,480 mg/kg at 25 ft bgs and 304 mg/kg at 60 ft bgs. The monitor well has been sampled quarterly since it has been installed.

On July 29th, 2013, a Corrective Action Plan (CAP) was submitted to the NMOCD. The CAP recommended that ROC install a 20-mil reinforced poly liner measuring 62 ft x 61 ft at a depth of 3 ft bgs. The soils placed above the liner will have a laboratory chloride reading no greater than 500 mg/kg and a field PID reading below 100 ppm. Upon completion of backfilling, the site will be seeded with a native vegetative mix and soil amendments will be added as necessary. The CAP also recommended that ROC install a monitor well (MW-2) approximately 100 ft up-gradient of the site. The monitor well would be sampled quarterly in conjunction with MW-1. NMOCD approved the CAP on August 14, 2013.

CAP Report for Soils

On December 31st, 2013, RECS personnel were on site to begin liner installation CAP work. The site was excavated to 62 ft x 61 ft x 3.5 ft deep (Figure 2). The excavated soil was rock screened and a total of 632 yards of soil was taken to a NMOCD approved facility for disposal. A total of 627 yards of blow sand was imported to the site to be used as padding for the liner and backfill. A sample of the imported blow sand was field tested for hydrocarbons using a PID and returned a result of 3.5 ppm. The sample was taken to a commercial laboratory for analysis and returned a laboratory chloride reading of non-detect.

The bottom of the excavation was padded with 6 inches of the imported blow sand and a 20-mil reinforced poly liner was installed and properly seated at a depth of 3 ft bgs. The top of the liner was then padded with 6 inches of imported blow sand. The screened rock was returned to the excavation and topped with the imported top soil. The site was tilled with soil amendments and seeded with a blend of native vegetation. A silt net fence was place around the site to reduce erosion and maintain soil integrity. Documentation of the CAP activities can be found in Appendix A.

Groundwater Remedy

The up-gradient monitor well (MW-2) is scheduled to be installed this week. The monitor well will be sampled quarterly in conjunction with MW-1 (Figure 2). Once the monitor wells have been analyzed for chloride and BTEX readings and up-gradient groundwater quality has been determined, ROC will submit a groundwater remedy to NMOCD to address groundwater quality at the site.

ROC acknowledges they have met the soil requirements as approved by NMOCD in the Corrective Action Plan (CAP), and the newly installed 20-mil reinforced liner will prohibit the migration of any residual chlorides. Vegetation above the liner will 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. As such, ROC requests 'Soil Closure' for this site.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,
Rice Environmental Consulting & Safety (RECS)

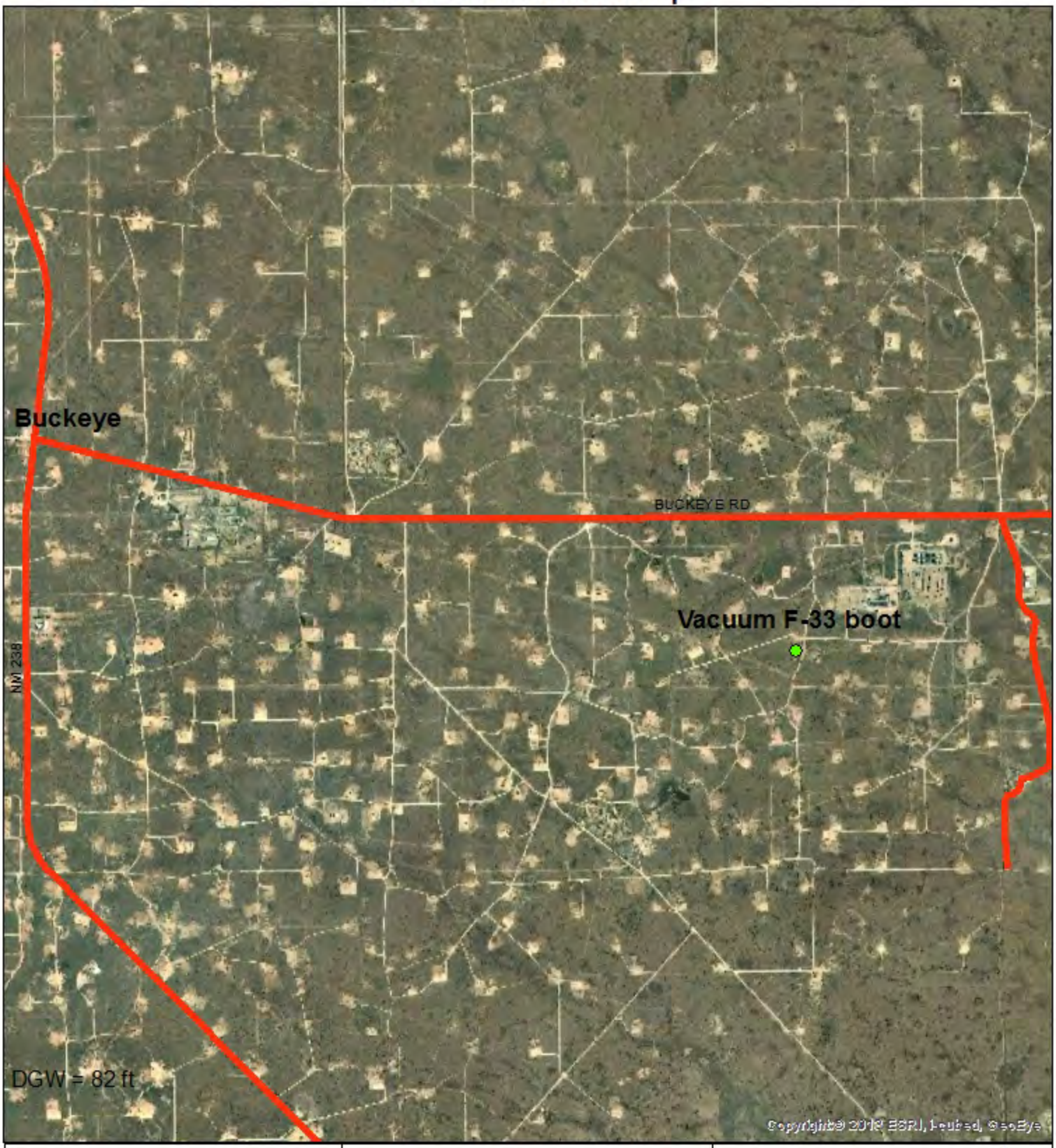
L Flores

Laura Flores
Project Manager

Attachments:

- Figure 1 – Site Location Map
- Figure 2 – Installed NMOCD Approved Liner & MW-2
- Appendix A – Liner Installation Documentation

Site Location Map



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC
RECS

VACUUM F-33 BOOT

LEGALS: UL/F sec. 33
T-17-S R-35-E
LEA COUNTY, NM

NMOCD CASE #: 1R425-37

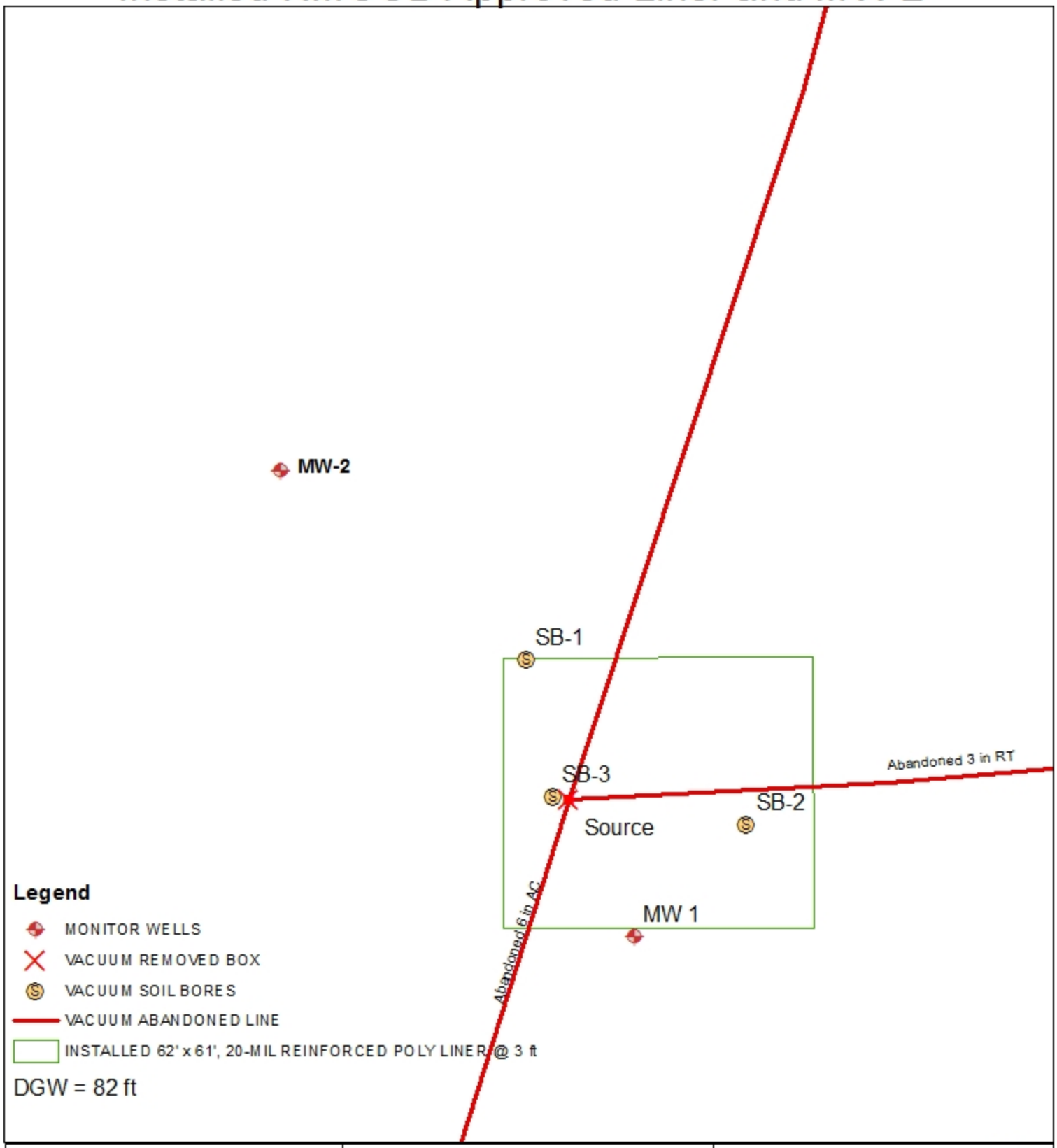
Figure 1

N
W E
S

0 0.4 0.8
Miles

Drawing date: 2/3/14
Drafted by: L. Flores

Installed NMOCD Approved Liner and MW-2



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

RECS

VACUUM F-33 BOOT

LEGALS: UL/F sec. 33
T-17-S R-35-E
LEA COUNTY, NM

NMOCD CASE #: 1R425-37

Figure 2

N W E S

0 30 60 Feet

Drawing date: 2/3/14
Drafted by: L. Flores

Appendix A

Liner Installation Documentation

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

CARDINAL Laboratories

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

January 21, 2014

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM F-33 BOOT

Enclosed are the results of analyses for samples received by the laboratory on 01/16/14 7:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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
KATIE JONES
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	01/16/2014	Sampling Date:	01/14/2014
Reported:	01/21/2014	Sampling Type:	Soil
Project Name:	VACUUM F-33 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	T17S-R35E-SEC33 F - LEA CTY, NM		

Sample ID: GILES LEE IMPORTED TOPSOIL (H400138-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/17/2014	ND	416	104	400	3.92	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

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

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: RICE Operating	BILL TO
Project Manager: Katie Jones	P.O. #:
Address: 112 W. Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location: ROC Vacuum F-33 Boot	Phone #:
Sampler Name: Edward Cesareo	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							
H400138																											
1	Giles Lee Imported Top Soil	G	1			/					/		1-14-14	1:30	/												

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: Jonathan Flores	Date: 1-14-14 Time: 4:55	Received By: Jodi Henson	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool / Intact ☐ Yes ☑ Yes ☐ No ☐ No	CHECKED BY: (Initials)	REMARKS: email results Jonflores@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; kjones@riceswd.com; Lpena@riceswd.com; Knorman@rice-ecs, ecesareo@rice-ecs.com

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

#54

PO Box 2498
Hobbs, NM 88241
Phone: (575) 393-2967
Fax: (575) 393-0293

VEGETATION FORM

1. General Information

Site name: Vacuum F-33 boot						
U/L	Section	Township	Range	County	Latitude	Longitude
F	33	17	35	Lea	N32o47.552	W103o27.860
Contact Name: Hack Conder						
Email: hconder@rice-ecs.com						
Site size: 90 ft. by 100 ft.			square feet: 9000 sq. ft.			

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

Salvaged from site		Bioremediated	X	Imported		Blended		Depth (in)			
Texture:	Caliche and Topsoil			Describe soil & subsoil:		All Top Soil					
Soil prep methods:	Rip		Depth (in)		Disc	X	Depth (in)	3	Rollerpack		
Date completed:	1/17/2014										

3. Bioremediation

Fertilizer	x	Hay		Other	
Type:				Describe:	2 Bags Manure, 30 Bags Potting Soil, 15 Bags Bio Nhance.
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	x	Prescribed Mix		Seed Mix Name:	Lea County Mix 10 Lbs.Blue Grama 10 Lbs. Winter Wheat 10 Lbs.	Date:	1/21/2014
Broadcast	Used Dew Drop Drill				Method: With Broadcasting Seeder		
Soil conditions during seed:	Dry	x	Damp		Wet		
Observations:	Tilled soil, applied amendments and utilized dew drop drill to seed.						

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 Humphrey	Title: Environmenal Technician	Date:	1/21/2014
Signature:			

Vacuum F-33 boot (1R425-37)
Unit Letter F, Section 33, T17S, R35E

Site prior to excavation,
facing north 10/28/2013

Excavating the site,
Facing northwest 1/3/2014

Screening spoiled material,
Facing west 1/6/2014

Exporting spoiled material,
facing northwest 1/8/2014

Excavation padded with blow sand,
facing northeast 1/15/2014

20-mil, reinforced liner installed,
facing northwest 1/15/2014

Padding the excavation with blow sand,
facing southeast 1/15/2014

Importing top soil,
facing east 1/15/2014

Backfilling the excavation with screened rock,
facing northeast 1/15/2014

Backfilling the excavation,
facing northeast 1/16/2014

Spreading the amendments,
facing west 1/21/2014

Tilling the excavation,
facing east 1/21/2014

Tilling the excavation ,
facing west 1/21/2014

Seeding the site,
facing east 1/21/2014

Installing the silt net fence,
facing west 1/22/2014

Site complete,
facing north 1/22/2014