

**L. Peter Galusky, Jr. Ph.D., P.G.**

**Texerra LLC**

**20055 Laredo Lane Monument, Colorado 80132**  
**Tel: 719-339-6791 E-mail: lpg@texerra.com**

**November 8, 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: Initial CAP Report & Soil Closure Request**

Rice Operating Company – Vacuum SWD System

**Vacuum Jct. D-31-2:** UL/D, Sec. 31, T17S, R35E (formerly Vacuum Jct. C-31-2)

**NMOCD Case Number: 1R425-80**

Sent via Certified U.S. Mail w/ Return Receipt No. 7007 2560 0001 9729 0690

Mr. Hansen:

Rice Operating Company (ROC) has completed vadose zone corrective remedial measures outlined in the NMOCD approved Corrective Action Plan (CAP) of April 16<sup>th</sup>, 2012 and updated in the CAP Addendum submitted on August 28<sup>th</sup>, 2013. This report summarizes these efforts following a synopsis of the project history.

*Site History and Work Summary*

This site is located approximately 0.5 miles southeast of Buckeye, New Mexico in UL/D, Sec. 31, T17S, R35E. Soil bore installation at the site indicates that groundwater is likely to be encountered at 83 ft bgs. In 2008, ROC initiated work on the former Vacuum D-31-2 junction as part of the system abandonment. The site was delineated using a backhoe to form an excavation with dimensions 5x3x12-ft deep and soil samples were screened at regular intervals for both hydrocarbons and chlorides. Diesel range organics (DRO) and gasoline range organics (GRO) were detected in the 12 ft bgs grab sample (DRO 4,760 mg/kg; GRO 452 mg/kg). Soil chlorides from the same sample tested relatively low at 320 mg/kg. A soil bore was subsequently advanced at the former junction box location, with samples taken at 15 ft, 40 ft and 60 ft bgs for laboratory analysis. GRO was not detectable in any of these samples and DRO dropped to 645 mg/kg at 15 ft but was non-detectable in the 40 ft and 60 ft bgs samples. Soil chlorides measured 1,880 mg/kg, 3,120 mg/kg and 2,280 mg/kg at the 15 ft, 40 ft and 60 ft bgs sampling intervals, respectively. NMOCD was notified of potential groundwater impact on November 11<sup>th</sup>, 2009.

Substantial additional soil delineation was performed in 2011 and 2012 per the NMOCD approved Investigation and Characterization Plan (ICP) of May 2<sup>nd</sup>, 2011. Residual soil chlorides were elevated throughout each of the soil borings drilled. The lateral edges were defined by SB-5 to the east, SB-11 to the north, SB-8 to the west, and SB-10 to the south. The soil bore information was summarized in the CAP and CAP Addendum

## **Vacuum Junction D-31-2**

According to the CAP and CAP Addendum, ROC would install a liner with the overall dimensions of approximately 65 ft by 75 ft. Due to the presence of a non-ROC pipeline running through the site, ROC was not able to obtain permission to excavate beneath the pipeline. Therefore, two separate liners would be installed at a depth of 3 ft bgs, and would remain a safe distance from the active pipeline.

### *Corrective Action Measures*

The corrective action measures completed by ROC as outline in the CAP Addendum included the following:

The site was excavated to a depth of 3.5 ft bgs on the east and west side of the non-ROC pipeline. Each excavation was padded with approximately 6 inches of imported pond bottom, and a 20-mil reinforced liner was installed and properly seated in each excavation. The west excavation measured approximately 65 ft by 75 ft by 31 ft, and the east excavation measured approximately 39 ft by 27 ft. The top of the liners were padded with an additional 6 inches of imported pond bottom. The excavations were then backfilled with imported pond bottom and contoured to the surrounding area with imported blow sand. A composite sample of the blow sand was analyzed by a commercial laboratory, resulting in a chloride concentration below detectable limit. The sample was also field analyzed for hydrocarbon, resulting in a PID reading of 2.0 ppm. A composite sample of the pond bottom was analyzed by a commercial laboratory, resulting in a chloride concentration below detectable limit. The sample was also field analyzed for hydrocarbon, resulting in a PID reading of 1.6 ppm. Amendments were added to the soil, and the site was seeded with a blend of native vegetation. Approximately 632 cu yards of excavated soil were properly disposed of at a NMOCD approved facility, and approximately 788 cu yards of material were imported to be utilized as backfill.

### *Proposed Path Forward*

According to the NMOCD approved CAP, ROC will install a near-source monitor well (MW-1) to determine groundwater quality. Additional monitoring wells may be required to fully delineate groundwater quality. The well will be sampled quarterly and once groundwater quality has been determined, ROC will submit a report to NMOCD with recommendations.

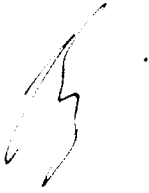
Having protected groundwater from potential future impacts from residual soil chlorides, ROC respectfully requests 'Soil Closure' status for the *unsaturated* (vadose or soil) zone.

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.

We appreciate your consideration of this Initial CAP Report & Soil Closure Request. Please do not hesitate to contact either Katie Jones of Rice Operating Company or myself if you have any questions or need additional information.

Sincerely,

**Vacuum Junction D-31-2**

A handwritten signature in black ink, appearing to read 'L. Peter Galusky, Jr.', written in a cursive style.

**L. Peter Galusky, Jr. Ph.D.**

Copy: Rice Operating Company  
Attachment: Appendix (with contents as noted, below)

## **Vacuum Junction D-31-2**

# **APPENDIX**

- ✓ Location Map
- ✓ Installed Liner Plat
- ✓ Lab Analysis
- ✓ PID Sheet
- ✓ Revegetation Form
- ✓ Photographs of Liner Installation and Surface Restoration

# Site Location



***Vacuum jct. D-31-2***

**LEGALS: UL/D sec. 31  
T17S R35E**

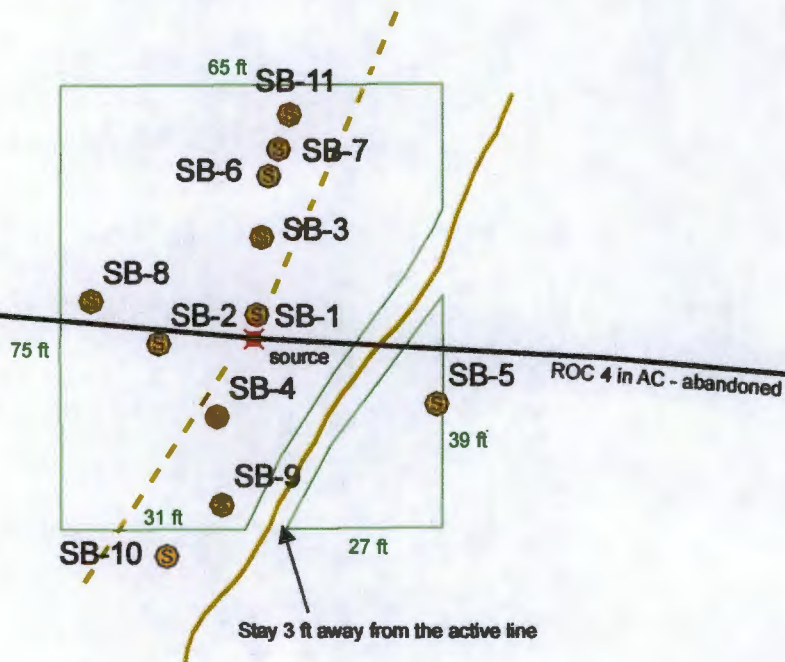
**NMOCD Case #: 1R425-80**



0 300 600 1,200  
Feet

Drawing date: 4-20-11  
Drafted by: L. Weinheimer





### Legend

- ABANDONED LINES
- - - BURIED LINE HIT
- CHEVRON SURFACE POLY
- SOIL BORES
- MARKING PLATE
- 20 MIL REINFORCED LINER @ 3 FT INSTALLED

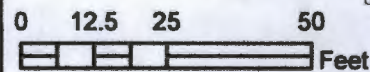
DGW: 83 ft



***Vacuum jct. D-31-2***

LEGALS: UL/D sec. 31  
T17S R35E

NMOCD Case #: 1R425-80



Drawing date: 11/8/13  
Drafted by: T. Grieco



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

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September 25, 2013

KYLE NORMAN

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM D-31-2

Enclosed are the results of analyses for samples received by the laboratory on 09/19/13 16:40.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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 (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,

A handwritten signature in black ink that reads "Caley D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Caley D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	09/19/2013	Sampling Date:	09/19/2013
Reported:	09/25/2013	Sampling Type:	Soil
Project Name:	VACUUM D-31-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: IMPORTED BLOW SAND (H302288-01)**

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	09/23/2013	ND	432	108	400	3.77		

**Sample ID: IMPORTED POND BOTTOM (H302288-02)**

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	09/25/2013	ND	416	104	400	3.77	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



### Notes and Definitions

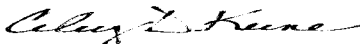
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



# 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.	<input type="checkbox"/>	MODEL: PGM 7300	SERIAL NO: 590-000508
MODEL	<input type="checkbox"/>	MODEL: PGM 7300	SERIAL NO: 590-000504
NO.	<input type="checkbox"/>	MODEL: PGM 7320	SERIAL NO: 592-903318
	<input checked="" type="checkbox"/>	MODEL: PGM 7300	SERIAL NO: 590-902690

GAS COMPOSITION: ISOBUTYLENE 100PPM AIR: BALANCE

THAN-248-100-3	EXPIRATION DATE: 07/12/2017
METER READING ACCURACY:	

ACCURACY : +/- 2%

## COMPANY

SITE	UNIT	SECTION	TOWN SHIP	RANGE
VACUUM jct. D-31-2	D	31	17	35

SAMPLE ID	PID	SAMPLE ID	PID
IMPORTED POND BOTTOM	1.6		
IMPORTED BLOW SAND	2		

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

SIGNATURE



DATE: 9-19-13



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

## VEGETATION FORM

### 1. General Information

Site name: Vacuum D-31-2						
U/L D	Section 31	Township 17.S	Range 35. E	County Lea	Latitude 32°47'50.721"N	Longitude 103°30'5.334"W
Contact Name: Hack Conder						
Email: <a href="mailto:hconder@rice-ecs.com">hconder@rice-ecs.com</a>						
Site size: 170'x118' square feet: 20,060						

### 2. Soils

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

Salvaged from site	<input type="checkbox"/> Bioremediated	<input type="checkbox"/> Imported	<input checked="" type="checkbox"/> Blended	Depth (in)	
Texture:	Sand	Describe soil & subsoil:		Blow Sand	
Soil prep methods	<input type="checkbox"/> Rip	Depth (in)	<input type="checkbox"/> Disc	<input checked="" type="checkbox"/> Depth (in)	3" Rollerpack
Date completed	9/25/2013				

### 3. Bioremediation

Fertilizer	<input type="checkbox"/> Hay	Other	<input checked="" type="checkbox"/>
Type	Describe:		20 Bags Restore Nchance, 20 Bags Potting
Lbs/acre	Soil and 2 Bags Manure		

### 4. Seeding

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

Custom Seed Mix	<input checked="" type="checkbox"/>	Prescribed Mix		Seed Mix Name:	20 lbs. each Blue Grama, Winter Wheat, Side	Date:	10/30/2013
Broadcast	Mechanical Seeder		Method: Dew Drop Drill Seeder				
Soil conditions during seed.	Dry	<input checked="" type="checkbox"/> Damp	<input type="checkbox"/> Wet				
Observations:	The Seed was tilled 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:	Edward Cesario	Title:	Environmental Technician	Date:	10/30/2013
Signature:					

**Vacuum Jct. D-31-2 (1R425-80)**  
**Unit Letter D, Section 31, T17S, R35E**



Site prior to excavation,  
facing northwest

7/2/2013



Excavating the site,  
facing northeast

9/11/2013



Exporting excavated soil,  
Facing north

9/16/2013



Importing blow sand,  
facing east

9/19/2013



Padding the excavation with pond bottom,  
facing east

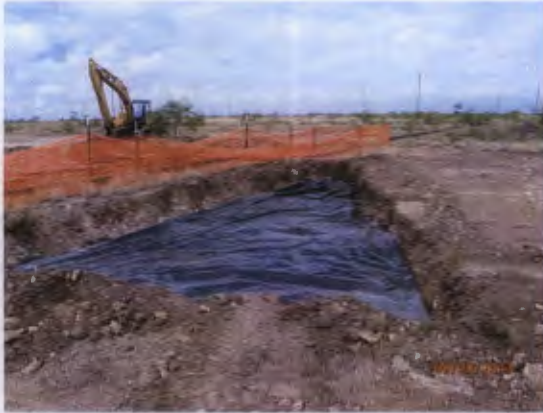
9/20/2013



20-mil, reinforced liner installed,  
facing southwest

9/20/2013





20-mil, reinforced liner installed,  
facing north 9/20/2013



Padding above the liner with pond bottom,  
facing east 9/20/2013



Backfilling the excavation,  
facing south 9/23/2013



Padding the second 20-mil, reinforced liner with  
pond bottom and backfilling, facing east 9/24/2013



Spreading blow sand,  
facing east 9/25/2013



Backfilling the excavation,  
facing south 9/23/2013



**Discing the backfilled excavation,  
facing west** 10/30/2013



**Adding amendments to the soil,  
facing southeast** 10/30/2013



**Seeding the backfilled site,  
facing west** 10/30/2013



**Adding amendments to the soil,  
facing north** 10/30/2013



**Seeding the Site, facing north** 10/30/2013



**Site complete,  
facing northwest** 10/30/2013