

11.  
1R-421-4.1

EME P-5 EOL

2013

CLOSURE

# **RICE** *Operating Company*

122 West Taylor • Hobbs, New Mexico 88240

Phone: (575) 393-9174 • Fax: (575) 397-1471

April 1, 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: Termination Request  
EME P-5 EOL: UL/P, Sec. 5, T21S, R36E  
RICE Operating Company – Eunice Monument Eumont (EME) SWD System

Mr. Lowe:

Rice Operating Company (ROC) is the service provider (agent) for the EME Saltwater Disposal (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**

In 2013, ROC initiated work on the former P-5 EOL junction box. The site is located in UL P, Sec. 5, T21S, R36E. NM OSE records indicate that groundwater would likely be encountered at a depth of approximately 164 +/- feet. The site was delineated using a backhoe to form a 3x7x8 ft deep excavation and soil samples were screened at regular intervals for both hydrocarbons and chlorides. Each sample was field titrated for chlorides and field screened using a PID for hydrocarbons, resulting in concentrations similar to background. The 8 ft sample was sent to a commercial laboratory for analysis for chloride and TPH, resulting in a chloride, gasoline range organics (GRO) and diesel range organics (DRO) concentration below detectable limits. A total of 12 cubic yards of excavated soil was properly disposed of at a NMOCD approved facility. A sample of the blowsand was submitted to a commercial laboratory for analysis of chloride, resulting in a concentration below detectable limits. The excavation was backfilled with the blowsand to ground surface and contoured to the surrounding area. On 6/26/2013, the site was seeded with a blend of native vegetation and is expected to return to a productive capacity at a normal rate. A junction box is no longer needed at the site.

The junction box final report, site map, area map, photo documentation, laboratory analysis, PID sheet, chloride graph and revegetation form are attached.

**Recommendations**

Site investigation demonstrates that residual chloride and hydrocarbons in the vadose zone will not with reasonable probability contaminate groundwater in excess of NMOCD standards. This site meets the requirements of the NMOCD-approved Revised Junction Box Upgrade Work Plan (July 16, 2003). As such, ROC request termination of the regulatory file, or similar closure status.

Please contact me at (575)393-2967 if you have any questions or wish to discuss this site. Thank you for your time and consideration.

Sincerely,  
RICE Operating Company

A handwritten signature in black ink, appearing to read 'H. Conder', with a stylized, flowing script.

Hack Conder  
Environmental Manager

enclosures

**RICE OPERATING COMPANY  
JUNCTION BOX FINAL REPORT**

**BOX LOCATION**

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
Eunice Monument Eumont (EME)	P-5 EOL	P	5	21S	36E	Lea	Length	Width	Depth
							Eliminated		

LAND TYPE: BLM \_\_\_\_\_ STATE \_\_\_\_\_ FEE LANDOWNER \_\_\_\_\_ DCP Midstream LP \_\_\_\_\_ OTHER \_\_\_\_\_ 0

Depth to Groundwater \_\_\_\_\_ 164 \_\_\_\_\_ feet NMOCD SITE ASSESSMENT RANKING SCORE: \_\_\_\_\_ 0

Date Started \_\_\_\_\_ 6/12/2013 \_\_\_\_\_ Date Completed \_\_\_\_\_ 6/24/2013 \_\_\_\_\_ OCD Witness \_\_\_\_\_ No

Soil Excavated \_\_\_\_\_ 6.2 \_\_\_\_\_ cubic yards Excavation Length \_\_\_\_\_ 3 \_\_\_\_\_ Width \_\_\_\_\_ 7 \_\_\_\_\_ Depth \_\_\_\_\_ 8 \_\_\_\_\_ feet

Soil Disposed \_\_\_\_\_ 12 \_\_\_\_\_ cubic yards Offsite Facility \_\_\_\_\_ Sundance Services \_\_\_\_\_ Location \_\_\_\_\_ Eunice, NM

**FINAL ANALYTICAL RESULTS:** Sample Date \_\_\_\_\_ 6/12/2013, 6/24/2013 \_\_\_\_\_ Sample Depth \_\_\_\_\_ 8' \_\_\_\_\_

TPH and Chloride laboratory test results completed by using an approved lab and testing procedures pursuant to NMOCD guidelines.

Sample Location	PID (field) ppm	GRO mg/kg	DRO mg/kg	Chloride mg/kg
SOURCE 8' GRAB	8.9	<10.0	<10.0	<16.0
BLOWSAND	2.1			<16.0

CHLORIDE FIELD TESTS		
LOCATION	DEPTH	mg/kg
background	8'	166
blowsand	n/a	139
vertical delineation trench at the junction (source)	4'	167
	5'	134
	6'	190
	7'	106
	8'	139

**General Description of Remedial Action:** This junction and line were eliminated during the pipeline replacement/upgrade program. After the former junction box was removed, an investigation was conducted using a backhoe to collect soil samples at regular intervals, creating a 3X7X8-ft. deep excavation. Chloride field tests performed on each sample yielded concentrations similar to that of the background sample.

Organic vapors were measured using a PID, which yielded low concentrations. The deepest sample, 8 ft. BGS, was sent to a commercial laboratory for analysis of chloride and TPH, which confirmed low concentrations of each. A total of 12 yards of excavated soil was properly disposed of at a NMOCD approved facility. A sample of imported blowsand was sent to a commercial laboratory for analysis of chloride. The excavation was backfilled with blowsand to ground surface and contoured to the surrounding area. On 6/26/2013, the site was seeded with a blend of native vegetation and is expected to return to a productive capacity at a normal rate.

enclosures: site location map, area map, photos, lab results, PID (field) screenings, chloride graph, revegetation form

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

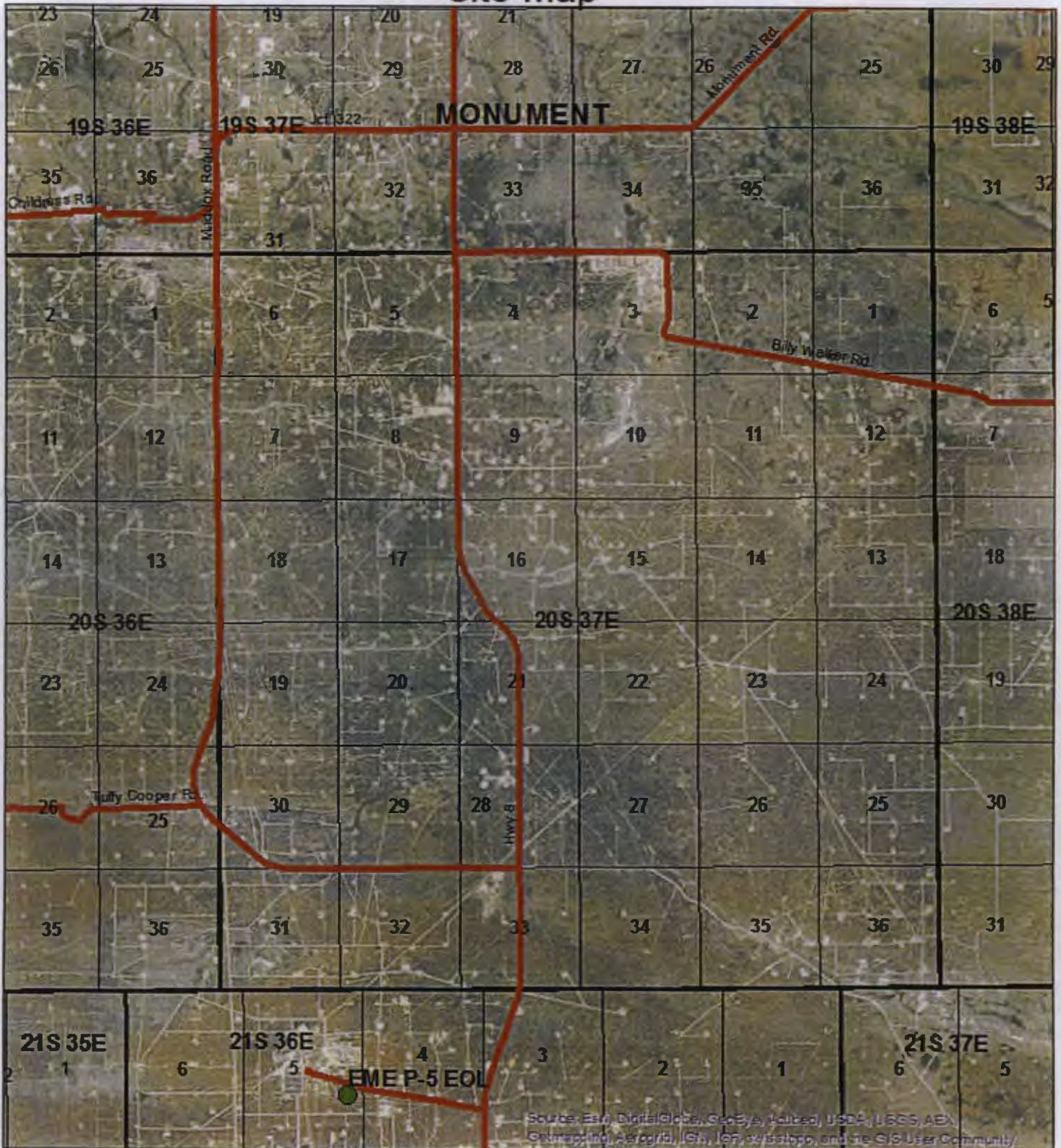
REPORT  
ASSEMBLED BY \_\_\_\_\_ Laura Flores \_\_\_\_\_ SIGNATURE *Laura Flores* COMPANY \_\_\_\_\_ Rice Environmental Consulting & Safety

SITE SUPERVISOR \_\_\_\_\_ Dyllan Yarbrough \_\_\_\_\_ SIGNATURE \_\_\_\_\_ Not Available \_\_\_\_\_ COMPANY \_\_\_\_\_ Rice Environmental Consulting & Safety

PROJECT LEADER \_\_\_\_\_ Kyle Norman \_\_\_\_\_ SIGNATURE *Kyle Norm* DATE 2-24-14



# Site Map



## EME P-5 EOL

Unit Letter P, Section 5,  
T21S, R36E  
Lea County, NM



0 4,000 8,000  
Feet

Drawing date: 2/19/14 LF

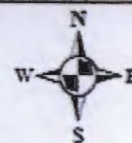


**EME P-5 EOL**

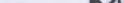
**21S 36E**

Source: Esri, DigitalGlobe, GeoEye, AeroGRID, USDA, USGS, AeroMap, IGN, IGP, Swisstopo, and the GIS User Community.

**Unit Letter P, Section 5,  
T21S, R36E  
Lea County, NM**



0                      620                      1,240

 Feet

Drawing date: 2/19/14 LF



# EME P-5 EOL

Unit P, Section 5, T21S, R36E



Collecting sample, facing north

6/12/2013



Installing vertical, facing south

6/12/13



Backfilling site, facing north

6/24/2013



Spreading seed, facing northeast

6/26/2013

June 18, 2013

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

RE: EME P-5 EOL

Enclosed are the results of analyses for samples received by the laboratory on 06/13/13 9:35.

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).

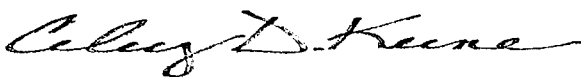
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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,



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: 06/13/2013  
 Reported: 06/18/2013  
 Project Name: EME P-5 EOL  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 06/12/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

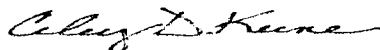
**Sample ID: VERTICAL @ 8' (H301355-01)**

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	06/14/2013	ND	416	104	400	3.77		
TPH 8015M			mg/kg							
			Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/17/2013	ND	213	106	200	0.409		
DRO >C10-C28	<10.0	10.0	06/17/2013	ND	212	106	200	4.05		
Surrogate: 1-Chlorooctane	107 %	65.2-140								
Surrogate: 1-Chlorooctadecane	99.2 %	63.6-154								

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

**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

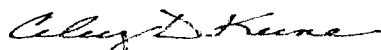
10/1/14

---

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

## **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**ARDINAL LABORATORIES**

**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**

[illegible]

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

HS#



# 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: PGM 7300	SERIAL NO: 590-000508
MODEL		MODEL: PGM 7300	SERIAL NO: 590-000504
NO.	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%

<b>COMPANY</b>
RICE OPERATING

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
EME	P-5 EOL	P	5	21S	36E

SAMPLE ID	PID	SAMPLE ID	PID
Background @ 6"	3.4		
Source @ 4'	28.4		
Source @ 5'	12.8		
Source @ 6'	30.2		
Source @ 7'	17.4		
Source @ 8'	8.9		

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

SIGNATURE: \_\_\_\_\_ Not Available \_\_\_\_\_ DATE: 6/12/2013

June 27, 2013

KYLE NORMAN

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME P-5 EOL

Enclosed are the results of analyses for samples received by the laboratory on 06/24/13 16:05.

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).

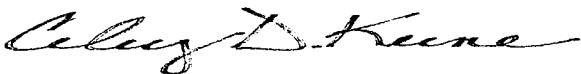
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 06/24/2013  
Reported: 06/27/2013  
Project Name: EME P-5 EOL  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 06/24/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

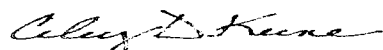
**Sample ID: BLOWSAND (H301474-01)**

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	06/27/2013	ND	400	100	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



**Notes and Definitions**

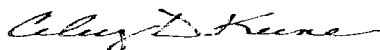
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

---

Cardinal Laboratories

\*=Accredited Analyte

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

## Page 4 of 4

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

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2676

75#

# RICE ENVIRONMENTAL CONSULTING & SAFETY

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

COPY

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%

<b>COMPANY</b>
RICE OPERATING

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
EME	P-5 EOL	P	5	21S	36E

SAMPLE ID	PID	SAMPLE ID	PID
Blowsand	2.1		

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

SIGNATURE: \_\_\_\_\_ Not Available \_\_\_\_\_ DATE: 6/24/2013



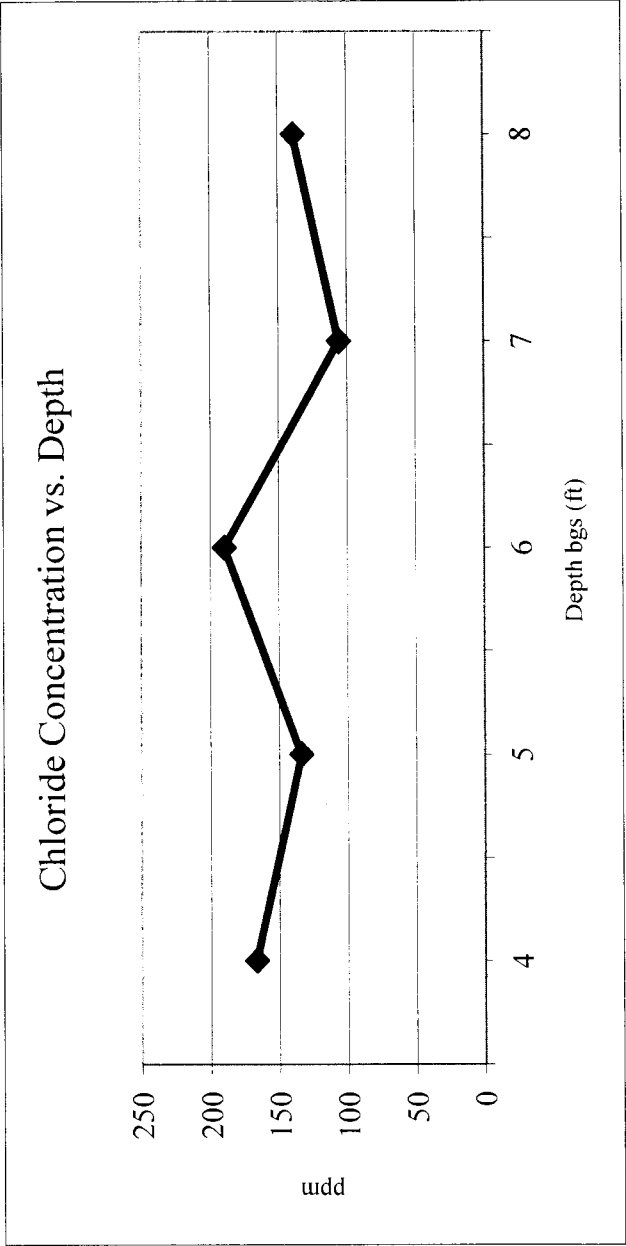
EME P-5 EOL

Unit 'P', Sec. 5, T21, R36E

Backhoe samples at junction (source)

Depth bgs (ft)	[Cl <sup>-</sup> ] ppm
4	167
5	134
6	190
7	106
8	139

Groundwater = 164 ft





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

## VEGETATION FORM

### 1. General Information

Site name: EME P-5 EOL						
U/L P	Section 5	Township 21S	Range 36E	County Lea	Latitude N-32°30'35.428"	Longitude W-103°16'57.430"
Contact Name: Hack Conder						
Email: hconder@rice-ecs.com						
Site size: 27X31=837 sqft						

### 2. Soils

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

Salvaged from site	Bioremediated	<input checked="" type="checkbox"/>	Imported	<input type="checkbox"/>	Blended	<input type="checkbox"/>	Depth (in)	
Texture:	Blowsand	Describe soil & subsoil:				light brown fine sand		
Soil prep methods:	Rip	<input checked="" type="checkbox"/>	6" Depth (in)	<input type="checkbox"/>	Disc	<input type="checkbox"/>	Depth (in)	Rollerpack
Date completed:	6/24/2013							

### 3. Bioremediation

Fertilizer	Hay	Other	<input checked="" type="checkbox"/>
Type:	Describe: 4 Bgs- Bio-nhnance		
Lbs/acre:	1 Bgs-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	<input type="checkbox"/>	Seed Mix Name:	2.5 Lbs-Racehorse Oats 2.5 Lbs Lea County mix	Date:	6/26/2013
Broadcast	mechanical			Method:	hand pushed seeder		
Soil conditions during seed:	Dry	<input checked="" type="checkbox"/>	Damp	<input type="checkbox"/>	Wet	<input type="checkbox"/>	
Observations:	Raked in amendments thoroughly into 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:	Dyllan Yarbrough	Title:	Environmental Tech	Date:	6/26/2013
Signature:					

**RICE** *Operating Company*

122 West Taylor • Hobbs, New Mexico 88240

Phone: (575) 393-9174 • Fax: (575) 397-1471

RECEIVED OCD

2014 MAR 32 A 10: 1~

April 1, 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: JUNCTION BOX UPGRADE REPORT for 2013  
EME SWD SYSTEM  
Lea County, New Mexico

Mr. Lowe:

Rice Operating Company (ROC) takes this opportunity to submit the Junction Box Upgrade results for the year 2013. Enclosed is a list of the completed junction boxes and their respective closure/disclosure dates. These boxes are located in the Eunice-Monument-Eumont (EME) Salt Water Disposal (SWD) System located in the vicinity of Eunice, New Mexico.

ROC completed 11 junction boxes in 2013.

Enclosed are the 2008 results (17 sites evaluated with 22 sampling locations) from the PID/BTEX study described in the NMOCD-approved Revised Junction Box Upgrade Work Plan (July 16, 2003). A third-party analysis, conducted by Peter Galusky, Jr. Ph.D. of Texerra, concluded from the data collected thus far that field-composited values tend to produce slightly higher BTEX numbers above the point at which BTEX concentrations become significant. This is likely due to the fact that BTEX is volatile and quickly biodegradable. This analysis was submitted to NMOCD on March 12, 2009. An appropriate number of sample sites could not be obtained to conduct a 2013 BTEX comparison analysis. Peter Galusky, Jr. Ph.D. of Texerra also compared ROC's 2013 chloride field tests to chloride laboratory analyses; the analysis is also enclosed. The study of this data continues to validate the accuracy of the chloride field tests employed by ROC.

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.

Replacement/closure projects of this magnitude require System Party AFE approval and work begins as funds are received.

Thank you for your consideration of this Junction Box Upgrade Report for 2013.

RICE OPERATING COMPANY

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

Hack Conder  
Environmental Manager

enclosures as stated

cc: SC, file, Mr. Geoffrey Leking  
NMOCD, District I Office  
1625 N. French Drive  
Hobbs, NM 88240

**Rice Operating Company  
EME SWD System Junction Box Upgrade Project  
2013 Completed Boxes**

		Legal Description							
	Jct Box Name	Unit	Sec	T	R	Completion Date	OCD Assessment Score	Report Status	Case Number
1	B-19 EOL	B	19	19S	37E	6/28/2013	20	Closure	
2	E-21 EOL	E	21	20S	37E	1/8/2014	20	Closure	
3	JCT. D-19	D	19	19S	37E	5/10/2013	20	Closure	
4	JCT. D-20	D	20	19S	37E	6/10/2013	20	Closure	
5	JCT. F-26	F	26	20S	36E	11/7/2012	0	Closure	
6	JCT. H-4	H	4	20S	36E	6/7/2013	20	Closure	
7	JCT. I-9	I	9	20S	36E	6/7/2013	20	Closure	
8	JCT. K-19	K	19	19S	37E	6/11/2013	20	Closure	
9	M-9 EOL	M	9	21S	36E	6/24/2013	0	Closure	
10	O-28 EOL	O	28	20S	36E	n/a	0	Closure	
11	P-5 EOL	P	5	21S	36E	6/24/2013	0	Closure	



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

**Texerra**

**505 N Big Spring, Suite 404 Midland, Texas 79701**

**Tel: 432-634-9257 E-mail: lpg@texerra.com**

March 10<sup>th</sup>, 2009

Mr. Brad Jones  
New Mexico Energy, Minerals, & Natural Resources  
Oil Conservation Division, Environmental Bureau  
1220 S. St. Francis Drive  
Santa Fe, New Mexico 87504

Re: Comparison of Field versus Lab Compositing of BTEX soil samples  
Rice Operating Company, Junction Box Upgrade Work Plan

Sent via Certified Mail w/ Return Receipt No. 7006 0100 0001 2438 3944

Dear Mr. Jones:

On behalf of Rice Operating Company (ROC) I am submitting the attached comparison and analysis of field versus laboratory soil compositing for soil BTEX samples. This is to address the question of whether it is better to mix multiple samples in the field or to do so in the laboratory in order to produce a composite, representative sample for analysis. This work was undertaken in support of ROC's Junction Box Upgrade Work Plan to ensure the quality of their field analysis program.

In brief, this work indicates that field compositing of soil samples generally gives rise to *slightly* higher BTEX values than does laboratory compositing of multiple samples. This is presumably due to the likelihood that field compositing and packaging of soil samples better preserves sample integrity. It would therefore appear that field compositing would represent the better method of procuring soil samples for subsequent analysis of BTEX.

Please call me if you have any questions or wish to discuss any of the details of this study.

ROC is the service provider (agent) for various Salt Water Disposal Systems (SWDs) and has no ownership of any portion of pipeline, well or facility. The SWD Systems that ROC operates are owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis.

Sincerely,



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

Copy: Rice Operating Company,  
Edward Hansen (NMOCD) sent certified mail w/ return receipt  
No. 7006 0100 0001 2438 3937

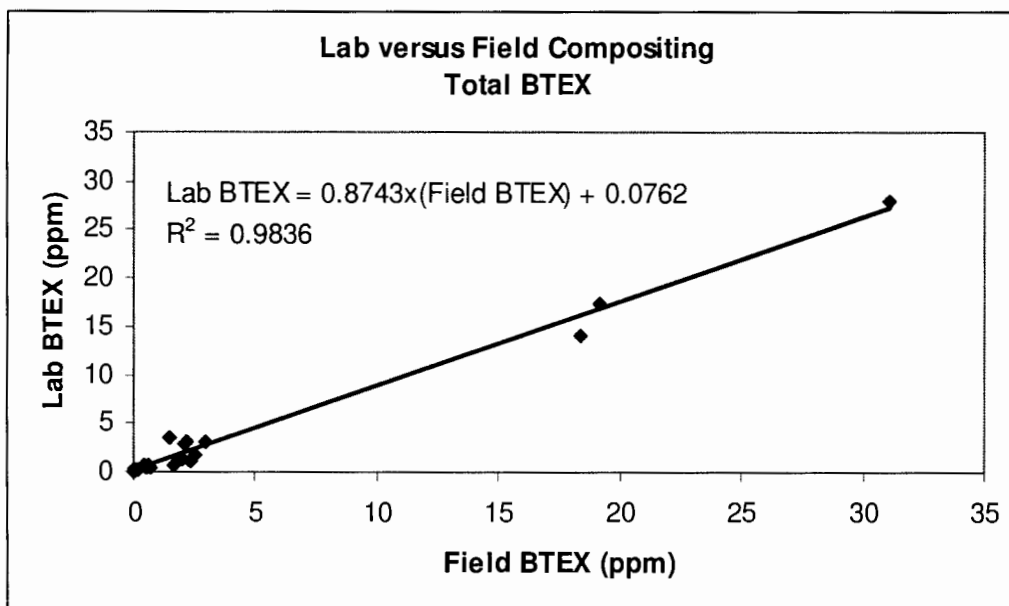
Attachment: As noted, above.

## Rice Operating Company

### Comparison of Field Compositing versus Laboratory Compositing of Soil BTEX Samples<sup>1</sup>

The careful mixing of multiple soil samples is critical in order to produce a representative, composite sample from a respective study area (such as an excavation face or bottom). Field technicians typically take four or five “grab” samples from excavation walls and/or bottom and send each of these to a laboratory for analysis of the composite, or mixed, sample. It would be far simpler, however, to composite such samples in the field. This study was undertaken to determine if field compositing produced results substantially different than laboratory compositing for the analysis of BTEX. Data were provided by Rice Operating Company encompassing 22 sampling locations over the period of 2004 through 2008.

A comparison of lab-composited soil samples versus field-composited soil samples revealed a close correspondence for total BTEX between the two methods (Figure 1).



**Figure 1** - Laboratory versus field-composited soil samples analyzed for BTEX.

The high  $R^2$  value (0.9836) of the best-fit statistical regression line indicates a high degree of reliability in using the field-compositing method over the range of values observed. Below a “field-composited BTEX” value of 0.61 ppm the “lab-composited BTEX” values are slightly lower. However, above a field-composited BTEX value of 0.61 the lab-composited values run slightly lower. In other words, the field-composited values tended to produce slightly higher BTEX numbers above the point at which BTEX concentrations become significant.

There is a reason for this. BTEX is volatile and quickly biodegradable. The compositing and “packaging” of soil samples in the field minimize the handling and aeration that occur in the laboratory. Thus, field-composited soil samples lose less BTEX to evaporation and/or biodegradation prior to laboratory analysis. In other words, the field compositing and packaging of soil samples better preserves sample integrity, and for this reasons would appear to represent the better method of procuring soil samples for subsequent analysis of BTEX.

<sup>1</sup> Prepared 03-12-09 by L. Peter Galusky, Jr. of Texerra.

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

**Texerra LLC**

**20055 Laredo Lane Monument, CO 80132  
Tel: 719-339-6791 E-mail: [lpg@texerra.com](mailto:lpg@texerra.com)**

March 25<sup>th</sup>, 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: Comparison of 2013 Laboratory versus Field Measured Soil Chloride Values  
Rice Operating Company, Junction Box Upgrade Work Plan

Mr. Lowe:

The attached comparison and analysis of 2013 laboratory versus field measured soil chloride values is submitted in support of Rice Operating Company's (ROC's) Junction Box Upgrade Work Plan to ensure the quality of their field analysis program.

In brief, this work indicates that Rice's 2013 field chloride measurement efforts provided a reasonable qualitative approximation of the laboratory-measured (and presumed true) values.

ROC is the service provider (agent) for various Salt Water Disposal Systems (SWDs) and has no ownership of any portion of pipeline, well or facility. The SWD Systems that ROC operates are owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Please call me if you have any questions or wish to discuss this study.

Sincerely,

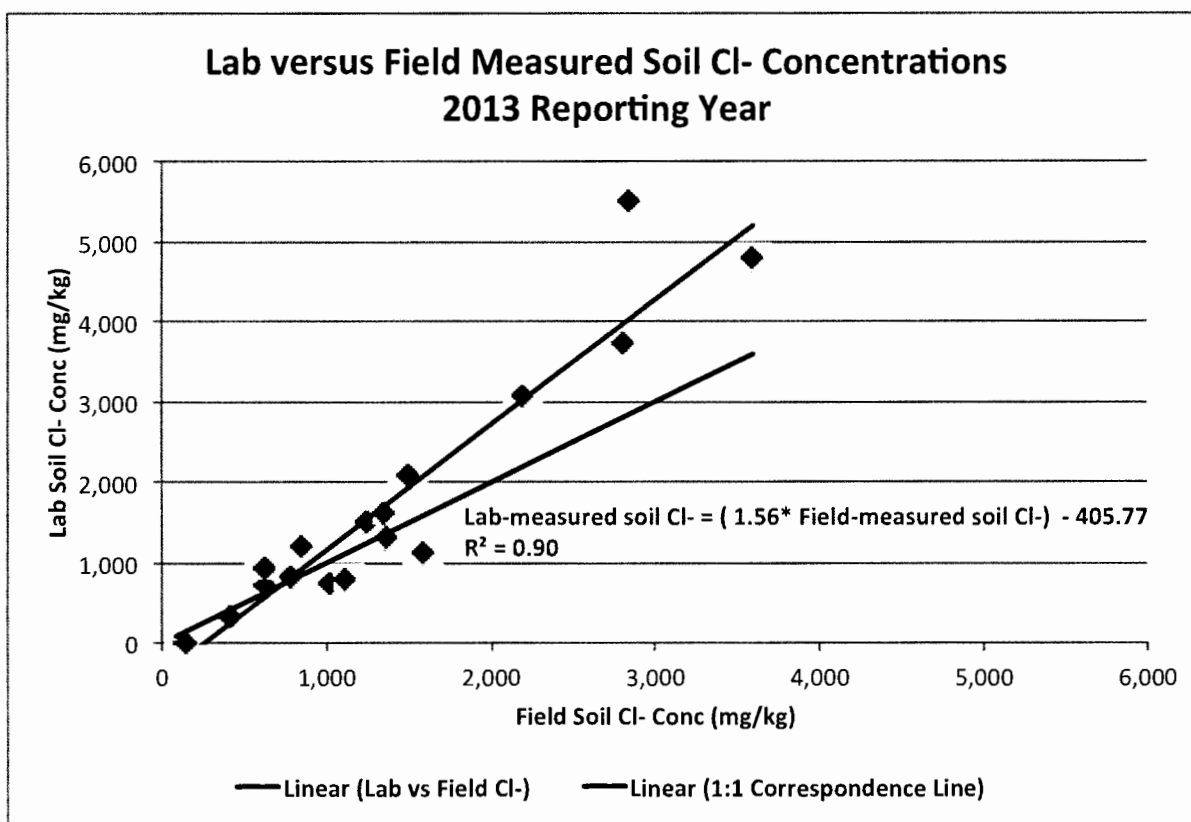


L. Peter Galusky, Jr. Ph.D.  
Principal

Copy: Glenn VonGonten, NMOCD; Rice Operating Company  
Attachment: As noted, above.

**Rice Operating Company**  
**Comparison of Laboratory to Field Measured Soil Chloride Concentrations**  
**Based upon 2013 Field Data**

A representative sample of 29 pairs of laboratory versus field measured soil chloride values was compared to determine how well field measurements matched laboratory measurements. It is assumed that laboratory measurements better represent the “true” values due to the controlled environment that a laboratory provides. A simple plot of the laboratory versus field measured soil chloride values is given below (Figure 1).



**Figure 1** – Laboratory versus field measured soil chloride measurements (n = 29 paired sets).

A straight line fit to the data confirms a general linear trend over a wide range of soil chloride concentrations, and the  $R^2$  value (0.90) indicates that field measurements provide a reliable approximation of laboratory-measured values. Based on the best-fit line of lab vs field measured values, field measured values overestimate lab measure values below a field measured value of 723 mg/kg and above this underestimate the lab-measured values. This is indicated in the graph where the (blue) best-fit line of lab vs field measured chlorides crosses the (black) line which would indicate a 1:1 correspondence.

## Junction Box Upgrade Program Closure/Disclosure Submissions for 2013

Updated: 3-3-12

[illegible]