1RP-427-65

Termination

DATE:
March 26, 2014

From:	Lowe, Leonard, EMNRD
To:	"Hack Conder (hconder@riceswd.com)"
Cc:	"Katie Jones"
Subject:	Approved Termination (1R-427-65) - EME L - 25
Date:	Wednesday, March 26, 2014 1:56:00 PM
Importance:	High

Termination Request Approved
for the EME G-25 (1R427-65)
Unit Letter L Section 25, T19S, R36E, NMPM, Lea County, New Mexico

Dear Mr. Conder:

The New Mexico Oil Conservation Division (OCD) has received RICE Environmental ’s Request to terminate the above-referenced site, dated January 20, 2014. The termination request 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 remediation plan (1R-427-65) is terminated 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

CERTIFIED MAIL
RETURN RECEIPT NO. 7007 2560 0000 4569 9125

January 20, 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: **CAP Report and Termination Request**
RICE Operating Company – EME SWD System
EME L-25 (1R427-65): UL/L, Sec. 25, T19S, R36E

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

Background and Previous Work

The site is located approximately 3 miles west of Monument, New Mexico at UL/L sec. 25, T19S R37E as shown on the Site Location Map (Figure 1). Groundwater beneath this site is located at a depth of 14 +/- ft.

In 2002, ROC initiated work on the former EME L-25 junction box. After the former junction box was removed, the site was delineated using a backhoe to collect soil samples at regular intervals, creating a 20 x 20 x 5 ft deep excavation. Each sample was field titrated for chlorides and field screened using a PID for hydrocarbons. Representative samples were collected from the excavation walls and excavation bottom and sent to a commercial laboratory for analysis. The sidewall sample resulted in a chloride concentration of 1,760 mg/kg and concentrations of gasoline range organics (GRO), diesel range organics (DRO) and BTEX below detectable limits. The bottom composite sample resulted in a chloride concentration of 3,830 mg/kg, GRO and BTEX concentrations below detectable limits and a DRO concentration of 24 mg/kg. The excavation was backfilled with the excavated soil to 5 ft below ground surface (bgs). At 5-4 ft bgs, a 1 foot thick clay barrier was installed. The excavation was then backfilled using the remaining excavated soil and contoured to the surrounding area. The clay layer will provide a barrier that will inhibit the downward migration of chlorides to groundwater. A new, watertight junction was installed at the site. A Junction Box Closure Report was submitted to NMOCD with all the 2002 junction box closures and disclosures.

To further investigate the depth of chloride concentrations, a soil bore was initiated on February 11th, 2013, at 12 ft northeast of the former junction box site. The boring was advanced to a depth of 10 ft bgs with soil samples collected every 5 ft. Each sample was field titrated for chlorides and field screened using a PID for hydrocarbons. The entire bore hole was plugged in total with bentonite to ground surface.

On April 11th, 2013, ROC submitted an Update Report to NMOCD outlining the activities conducted at the site. NMOCD approved the Update Report on May 2nd, 2013 and stipulated that ROC submit an Investigation and Characterization Plan to NMOCD within 180 days.

An Investigation and Characterization Plan (ICP) was submitted to NMOCD on August 6th, 2013 and approved on August 20th, 2013. As part of the ICP, 14 additional soil bores were installed at the site. As the bores were advanced, samples were taken at regular intervals and field tested for chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for analysis. Laboratory analysis of the bores showed that the interior bores had elevated chloride levels. As the bores were drilled farther away from the abandoned box, the laboratory chloride readings dropped until SB-5, SB-14 and SB-15, the outermost bores, achieved readings below 250 mg/kg at all depths. However, this pattern was not observed in the bores going to the east. As the bores were drilled farther from the abandoned box to the east, the laboratory chloride levels increased. It is evident from this data, that the abandoned box was not the source of the increased chlorides heading to the east, towards an abandoned production well head.

An ICP Report and Corrective Action Plan (CAP) was submitted to NMOCD on September 20th, 2013. As part of the CAP, RECS recommended that ROC excavate the site to 151 ft x 71 ft to the depth of 14 ft bgs. This excavation would remove the impacted vadose zone above groundwater and the existing 20 x 20 ft clay layer located at 5 ft bgs. Clean soil would be imported to the site and 5 ft of the clean soil would be placed in the bottom of the excavation, up to 9 ft bgs. At 9 ft bgs, a 20-mil reinforced liner would be installed and properly seated. The excavation above the liner would be backfilled with soil containing a chloride concentration below 500 mg/kg and a field PID reading below 100 ppm. Excavated soil would be evaluated for use as backfill, and any soil requiring disposal would be properly disposed of at a NMOCD approved facility. The site would be contoured to the surrounding area. Soil amendments would be added as necessary and the site will be seeded with a blend of native vegetation. Vegetation will provide an infiltration barrier for the site, since plants capture water through their roots thereby reducing the amount of water traveling through the vadose zone to groundwater. Once the vadose zone remedy had been completed, RECS recommended that ROC install two monitor wells at the site. MW-1, the near-source well, would be installed outside the excavation to determine what, if any affect, the residual chlorides in the vadose zone have had on the groundwater. MW-2 would be installed approximately 100 ft up-gradient of the site to determine if there is an up-gradient source of chlorides impacting the site. The monitor wells would be sampled quarterly. NMOCD approved this plan on October 9th, 2013.

Based on what was observed while excavating the site, ROC submitted an ICP Report and CAP Addendum to the NMOCD On November 14th, 2013. According to the Addendum, a hard

sandstone layer was encountered at approximately 12 – 13 ft bgs, and groundwater was encountered beneath the sandstone layer at 14 ft bgs. The sandstone layer acts as an infiltration barrier preventing the downward migration of residual constituents to groundwater. Once groundwater was encountered, a sample was field tested to determine the chloride concentration, resulting in a concentration of approximately 60 mg/L. An 8 pt bottom composite sample was then collected at the 10 ft depth, and was field tested for chloride and hydrocarbon. This resulted in a chloride concentration of 427 mg/kg and a PID reading of 1.0 ppm. The groundwater sample and bottom composite were sent to a commercial laboratory for confirmation. Based on the low field chloride concentration at 10 ft bgs, the sandstone layer , and the low chloride concentration of groundwater, ROC requested to pad the current excavation with 6 inches of blow sand and install a 20-mil reinforced liner at approximately 9.5 ft bgs. The liner would be padded with an additional 6 inches of blow sand, and the excavation would be backfilled to ground surface. All backfill material would have a chloride concentration below 500 mg/kg and field PID reading below 100 ppm. Any soil requiring disposal will be properly disposed of at a NMOCD approved facility. The site would be contoured to the surrounding area. Soil amendments would be added as necessary and the site will be seeded with a blend of native vegetation.

NMOCD approved the Addendum on November 14th, 2013, and requested that ROC submit the laboratory results for the groundwater at the site within 30 days. If the results indicated that any WQCC standards had been exceeded, than a corrective action plan for groundwater must be submitted to NMOCD.

ROC submitted a CAP Addendum and Additional Information to NMOCD on December 12th, 2013. The groundwater sample was taken to a commercial laboratory on November 12th, 2013, and returned a chloride result of 76 mg/L and a TDS result of 674 mg/L. The groundwater sample was collected from the down-gradient (southeast) corner of the excavation. Any constituents previously contributed to groundwater from the site would have been detected in that groundwater sample. Based on this data, it is evident that the residual chlorides in the vadose zone have not affected groundwater beneath the site. With the installation of the 20-mil reinforced poly liner and the removal of the impacted vadose zone soils, the vadose zone will in no way affected groundwater in the future. Therefore, a groundwater remedy was not needed for the site and the installation of monitoring wells was no longer warranted. NMOCD approved the Corrective Action Plan Addendum and Additional Information on January 7th, 2014.

Corrective Action Plan Report

On October 14th, 2013, RECS personnel began excavating the site to dimensions of 151 ft x 71 ft to a depth of 10 ft bgs, based on NMOCD approval of the Addendum (Figure 2). A total of 2,828 yards^3 of excavated material were taken to a NMOCD approved facility for disposal. The bottom of the excavation was padded with 6 inches of clean, imported blow sand and a 151 ft x 71 ft, 20-mil reinforced poly liner was installed and properly seated at a depth of approximately 9.5 ft bgs. The top of the liner was padded with 6 inches of the clean, imported blow sand. A sample of the imported blow sand was field tested for hydrocarbons using a PID and was sent to a commercial laboratory for analysis of chloride, resulting in a chloride concentration below

detectable limits and field PID reading of 1.1 ppm. The remaining excavated soil (backfill) and the remaining imported blow sand was returned to the excavation. A sample of the excavated soil (backfill) was field tested for hydrocarbons using a PID and was sent to a commercial laboratory for analysis of chloride, resulting in a chloride concentration of 352 mg/kg and field PID reading of 0.1 ppm. Top soil was imported and used to contour the site to the surrounding area. A sample of the topsoil (imported topsoil Cooper's pit) was field tested for hydrocarbons using a PID and was sent to a commercial laboratory for analysis of chloride, resulting in a chloride concentration below detectable limits and field PID reading of 0.2 ppm. A total of 1,774 yards^3 of blow sand were imported, and a total of 1,021 yards^3 of top soil were imported to the site. The site was then seeded with a native seed blend and a silt net fence was placed around the site to maintain seed integrity. Documentation of all site activities can be found in Appendix A.

Given that the residual constituents in the vadose zone will not in any way affect groundwater beneath the site and that the poly liner and vegetation will inhibit further migration of constituents to groundwater, 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) 393-2967 or me if you have any questions or wish to discuss the site.

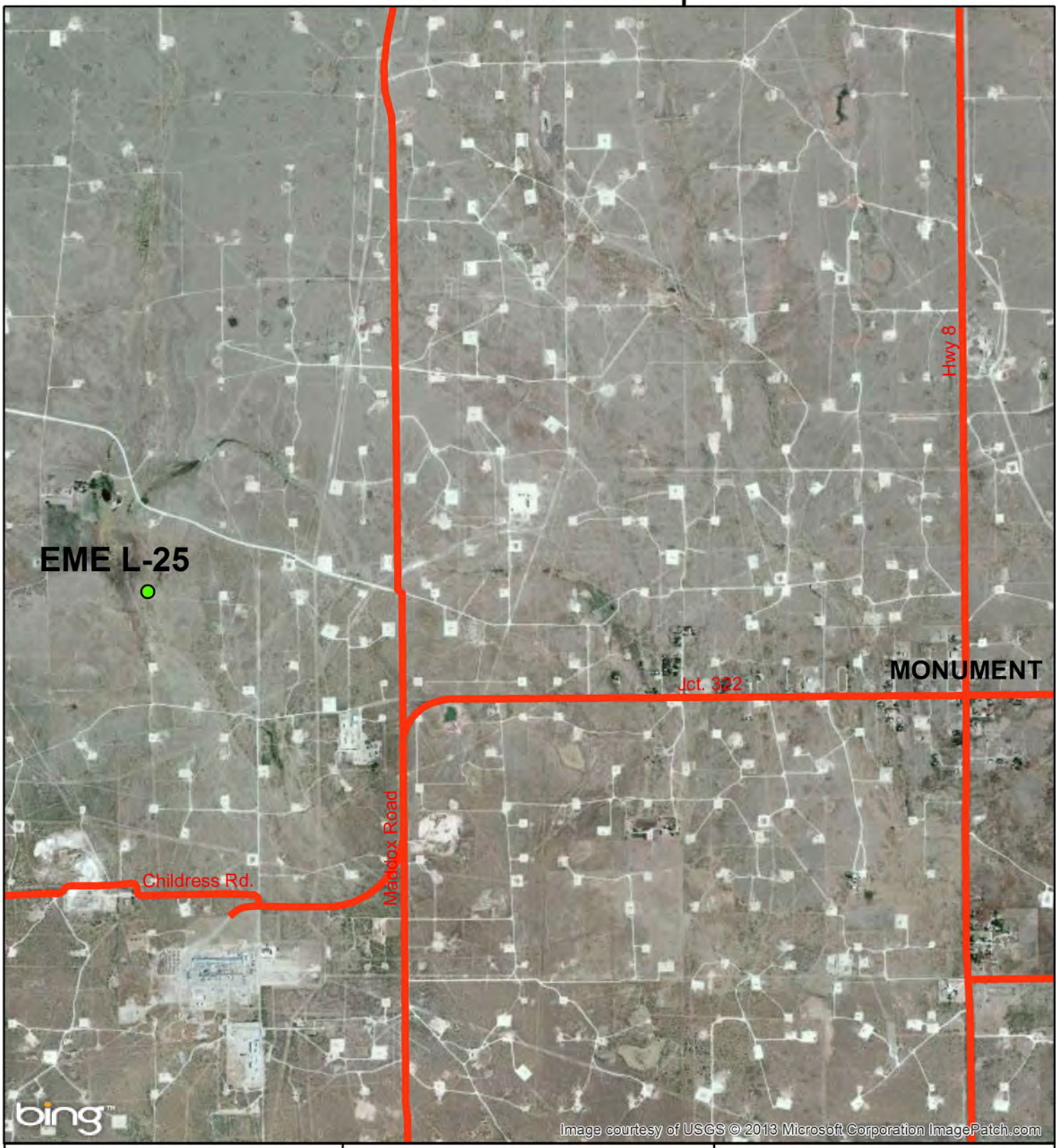
Sincerely,

L Flores

Laura Flores
Project Manager
RECS

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

Site Location Map



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC
RECS

EME L-25

Legals: UL/L sec. 25
T-19-S R-36-E
LEA COUNTY, NM

NMOCD Case #: 1R427-65

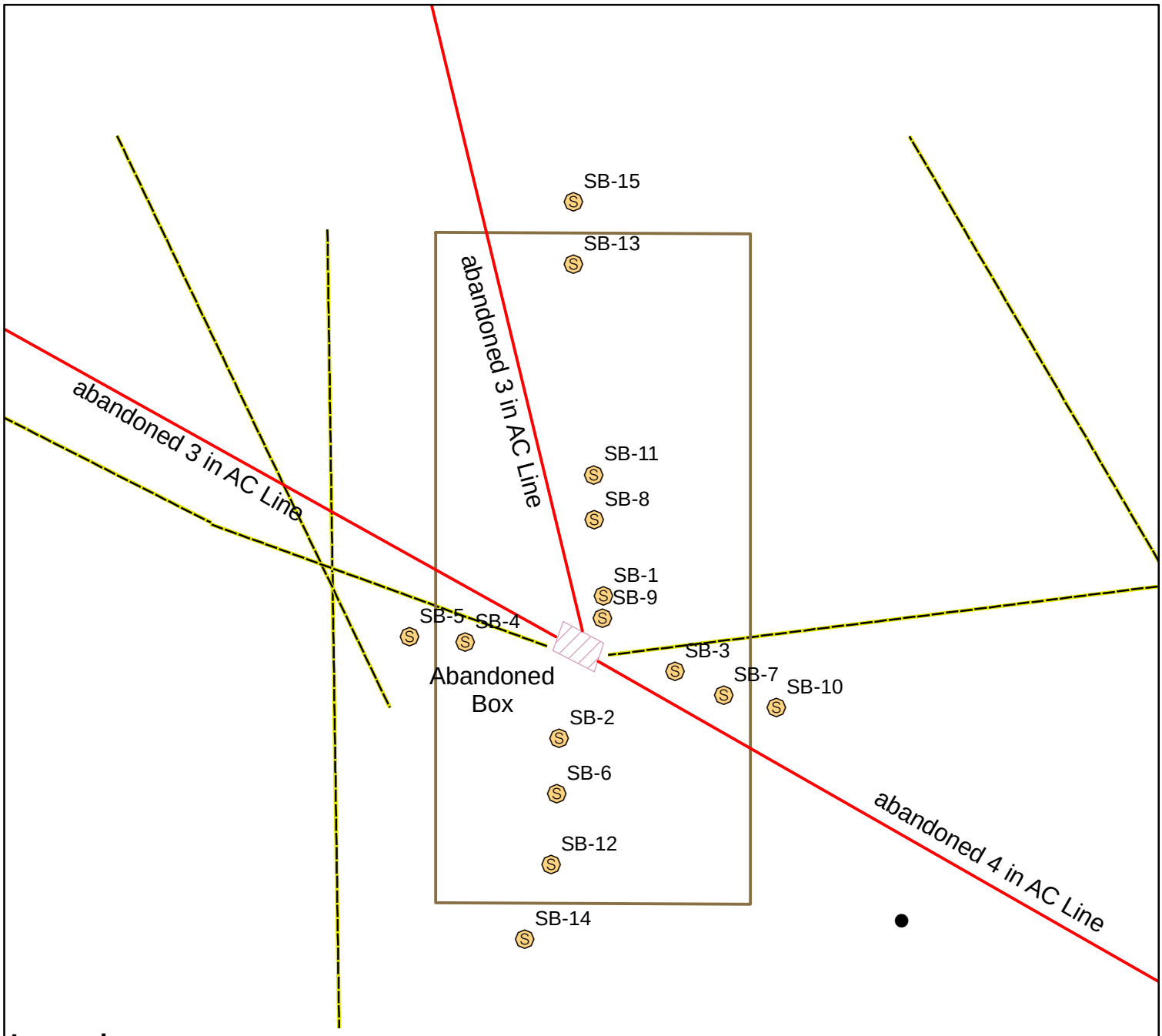
Figure 1

N
W E
S

0 1,900 3,800
Feet

Drawing date: 7/31/13
Drafted by: L. Weinheimer

Liner Installation



Legend

- EME SOIL BORES
- NON-ROC ABANDONED WELLHEAD
- INSTALLED 151' x 71' 20-MIL POLY LINER AT 9.5 FT BGS
- BURIED PIPELINE
- VALVE GUARD

DGW = 14 ft

RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

EME L-25

Legals: UL/L sec. 25
T-19-S R-36-E
LEA COUNTY, NM

NMOCD Case #: 1R427-65

Figure 2

N W E S

0 25 50 Feet

Drawing date: 1/15/14
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

October 28, 2013

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME L-25

Enclosed are the results of analyses for samples received by the laboratory on 10/23/13 8:15.

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:	10/23/2013	Sampling Date:	10/22/2013
Reported:	10/28/2013	Sampling Type:	Soil
Project Name:	EME L-25	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	19S / 36E		

Sample ID: IMPORTED BLOW SAND (H302561-01)

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	10/23/2013	ND	432	108	400	0.00	

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
(575) 393-2326 FAX (575) 393-2476

Company Name: Rice		BILL TO	
Project Manager:		P.O. #:	
Address: 112 W Taylor		Company:	
City:	State: NM Zip: 88240	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State:	Zip:
Project Location: Rice EME L25		Phone #:	
Sampler Name: KARANJA LEWIS		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
H302561															
1	Imported Blow Sand	C	1			✓					✓		10-22-13	2:54	✓

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: KARANJA LEWIS	Date: ~~10-22-13~~ 10/23/13	Received By: Jodi Henson		Phone Result: ☐ Yes ☐ No	Add'l Phone #:
	Time: 8:15			Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Relinquished By:	Date:	Received By:		REMARKS: hconder@riceswd.com klewis@rice-ecs.com Knorman@rice-ecs.com Kjones@riceswd.com lweinheimer@rice-ecs.com lflores@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

#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
		MODEL: PGM 7320	SERIAL NO: 592-903318
	X	MODEL: PGM 7300	SERIAL NO: 590-001413

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO : HAL-248-100-1	EXPIRATION DATE: 07/01/2015
METER READING ACCURACY: 100.0 ppm	

ACCURACY : +/- 2%

COMPANY
RICE Operating Company (ROC)

SITE	UNIT	SECTION	TOWN SHIP	RANGE
EME L-25	L	25	19S	36E

SAMPLE ID	PID	SAMPLE ID	PID
IMPORTED BLOW SAND	1.1		

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

SIGNATURE: Tanya Lewis DATE: 10-22-13

CARDINAL Laboratories

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

November 15, 2013

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME L-25

Enclosed are the results of analyses for samples received by the laboratory on 11/14/13 16:55.

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:	11/14/2013	Sampling Date:	11/14/2013
Reported:	11/15/2013	Sampling Type:	Soil
Project Name:	EME L-25	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	19S / 36E		

Sample ID: BACKFILL (H302789-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	11/15/2013	ND	432	108	400	0.00	

Sample ID: 8 PT COMPOSITE @ 10' (H302789-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**416**	16.0	11/15/2013	ND	432	108	400	0.00	

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
(575) 393-2326 FAX (575) 393-2476

Company Name:	Rice	**BILL TO**	
Project Manager:	Kyle Norman	**P.O. #:**	
Address:		**Company:**	
City:	**State:** **Zip:**	**Attn:**	
Phone #:	**Fax #:**	**Address:**	
Project #:	**Project Owner:**	**City:**	
Project Name:		**State:** **Zip:**	
Project Location:	EME L-25	**Phone #:**	
Sampler Name:	KARANJA LEWIS	**Fax #:**	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Chlorides
H302789															
1	Backfill	C	1			✓					✓		11-14-13	2:21	✓
2	8pt composite @ 10'	C	1			✓					✓		11-14-13	4:24	✓

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 consequental 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: KARANJA LEWIS	**Date:** 11-14-13 **Time:** 4:55	**Received By:** Jodi Henson	
Relinquished By:	**Date:** **Time:**	**Received By:**	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	**Sample Condition** Cool: ☐ Yes ☑ No Intact: ☑ Yes ☐ No	**CHECKED BY: (Initials)**	

Phone Result: ☐ Yes ☐ No **Add'l Phone #:**
Fax Result: ☐ Yes ☐ No **Add'l Fax #:**
REMARKS: email results to
kjones@riceswd.com
knorman@rice-ecs.com
hcrander@riceswd.com
lflores@rice-ecs.com
klewis@rice-ecs.com

RUSH

† 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
		MODEL: PGM 7320	SERIAL NO: 592-903318
	X	MODEL: PGM 7300	SERIAL NO: 590-[illegible] 902431

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT# IAM 248-100-6	EXP: 7/1/2015
METER READING:100 PPM	

ACCURACY : +/- 2%

COMPANY
RICE

SITE	UNIT	SECTION	TOWN SHIP	RANGE
EME L-25	L	25	19S	36E

SAMPLE ID	PID	SAMPLE ID	PID
8 POINT COMPOSITE @10'	0.2		

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

SIGNATURE: [signature]

DATE:11-14-13

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
		MODEL: PGM 7320	SERIAL NO: 592-903318
	X	MODEL: PGM 7300	SERIAL NO: 590-[illegible]902431

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT# IAM 248-100-6	EXP: 7/1/2015
METER READING:100 PPM	

ACCURACY : +/- 2%

COMPANY
RICE

SITE	UNIT	SECTION	TOWN SHIP	RANGE
EME L-25	L	25	19S	36E

SAMPLE ID	PID	SAMPLE ID	PID
BACKFILL	0.1		

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

SIGNATURE: Karanpi Sami

DATE:11-14-13

CARDINAL Laboratories

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

December 02, 2013

KYLE NORMAN

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME L-25

Enclosed are the results of analyses for samples received by the laboratory on 11/21/13 16:52.

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

Lab Director/Quality Manager

CARDINAL Laboratories

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:	11/21/2013	Sampling Date:	11/21/2013
Reported:	12/02/2013	Sampling Type:	Soil
Project Name:	EME L-25	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	19S / 36E		

Sample ID: IMPORTED TOP SOIL COOPER'S PIT (H302868-01)

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	12/02/2013	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
(575) 393-2326 FAX (575) 393-2476

Company Name: Rice	**BILL TO**	**P.O. #:**	
Project Manager: Kyle Norman		**Company:**	
Address:		**Attn:**	
City:	**State:**	**Zip:**	**Address:**
Phone #:	**Fax #:**		**City:**
Project #:	**Project Owner:**		**State:** **Zip:**
Project Name:			**Phone #:**
Project Location: EME L-25			**Fax #:**
Sampler Name: KARANJA LEWIS			

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
H302868															
1	Imported Top Soil Cooper's Pit	C	1			✓					✓		11-21-13	2:54	✓

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 consequental 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: KARANJA LEWIS	**Date:** 11-21-13 **Time:** 4:52	**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: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	**CHECKED BY: (Initials)**	**REMARKS:** email results to: knorman@rice-ecs.com lweinheimer@rice-ecs.com kjones@riceswd.com hconder@riceswd.com klewis@rice-ecs.com

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

#50

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
		MODEL: PGM 7320	SERIAL NO: 592-903318
	X	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:100.0 ppm	

ACCURACY : +/- 2%

COMPANY
RICE

SITE	UNIT	SECTION	TOWN SHIP	RANGE
EME L-25	L	25	19S	36E

SAMPLE ID	PID	SAMPLE ID	PID
IMPORTED TOP SOIL 8 POINT COMP.	0.2		

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

SIGNATURE: Karanja Sumi

DATE: 11-21-13

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

VEGETATION FORM

1. General Information

Site name: EME L-25						
U/L	Section	Township	Range	County	Latitude	Longitude
L	25	T19S	R36E	LEA	32°37'47"N	103°18'52"W
Contact Name: Kyle Norman						
Email: knorman@rice-ecs.com						
Site size: 500' x 100'			square feet: 50,000 sq. ft.			

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

Salvaged from site	X	Bioremediated		Imported	X	Blended	X	Depth (in)			
Texture: Sandy				Describe soil & subsoil: Red Sand and caliche							
Soil prep methods:	Rip		Depth (in)		Disc	X	Depth (in)	3"	Rollerpack		
Date completed: 12/18/2013											

3. Bioremediation

Fertilizer		Hay		Other	X
Type:				Describe: 44 Bags Bio Nhance, 13 Bags Restore Nhance, 34 Bags Potting Soil Mix and 22 Bags of Manure	
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: 50 LBS. Blue Grama, 50 LBS. Side Oats and 50 LBS. Winter Wheat				Date: 12/17/2013	
Broadcast Mechanical Seeder									
Soil conditions during seed:	Dry	X	Damp		Wet		Method: Used mechanical seeder.		
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: Jose Flores	Title: Field Technician	Date: 12/17/2013
Signature: Jose Flores		