

1R - 425-82

WORKPLANS

Date:

5-3-11

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

Texerra

75 Wuthering Hts Drive Colorado Springs, CO 80921

Tel: 917-339-6791 E-mail: lpg@texerra.com

May 3rd, 2011

Mr. Edward Hansen

New Mexico Energy, Minerals, & Natural Resources

Oil Conservation Division, Environmental Bureau

1220 S. St. Francis Drive

Santa Fe, New Mexico 87505

RECEIVED

RE: **INVESTIGATION & CHARACTERIZATION PLAN (ICP)**
Rice Operating Company – Vacuum SWD System
Vacuum Jct F-31: UL/F, Sec. 31, T17S, R35E
NMOCD Case Number: 1R425-82

MAY 12 2011

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

Sent via U.S. Mail w/ Certified Receipt No. 7011 0110 0001 5863 8156

Mr. Hansen:

RICE Operating Company (ROC) has retained Texerra 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/usage basis. Environmental projects of this nature require System Party AFE approval prior to work commencing at the site. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission is greatly appreciated.

For all such environmental projects, ROC will choose the path forward that:

- Protects public health,
- Provides the greatest net environmental benefit,
- Complies with NMOCD Rules, and
- Is supported by good science.

Each site shall generally have three submissions:

1. This Investigation and Characterization Plan (ICP) is proposed for gathering data and site characterization and assessment.
2. Upon evaluating the data and results from the ICP, a recommended remedy will be submitted in a Corrective Action Plan (CAP) if warranted.
3. Finally, after implementing the remedy, a Termination Request with final documentation will be submitted.

Vac Jct F-31

This site is located approximately 0.5 miles southeast of Buckeye, New Mexico in UL/F, Sec. 31, T17S, R35E as shown on the Site Location Map (Figure 1). NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 106 +/- feet.

In 2009 ROC initiated work on the former Vacuum F-31 junction as part of the system abandonment. The site was delineated using a backhoe to form an excavation with dimensions 10x15x12-ft deep and soil samples were screened at regular intervals for both hydrocarbons and chlorides. (Field and laboratory results are summarized in the attached Junction Box Disclosure Report). Laboratory analysis for diesel range organics (DRO) exceeded 1,500 mg/kg in the bottom and four-wall composite samples. Laboratory analysis for gasoline range organics (GRO) measured 206 and 116 mg/kg in the bottom and four-wall composite samples, respectively. Residual soil chlorides measured 1,010 mg/kg and 1,620 mg/kg using field titration methods from bottom and four-wall composite samples, respectively. Laboratory analysis of benzene and toluene from the bottom and four-wall composite samples each measured less than 0.05 mg/kg. However, ethylbenzene and total xylenes were at low but detectable levels in the bottom composite sample and measured 1.28 and 3.14 mg/kg, respectively. The four-wall composite measured 0.111 and 1.14 mg/kg. Blended backfill was returned to the site, which was then re-graded to natural contours. NMOCD was notified of potential groundwater impact on March 5th, 2010.

ROC proposes additional investigative and characterization work at the site to determine if there is potential for groundwater degradation from residual chlorides at the site.

Proposed Work Elements

1. Summarize information and data collected by ROC to date.
2. Summarize additional, publicly available regional and local hydrological information.
3. Conduct vertical and lateral delineation of residual soil chlorides and petroleum hydrocarbons from samples taken using a drill rig, hand auger and/or backhoe.
 - a. Vertical sampling will be conducted until the following criteria are met in the field.
 - i. Three samples in which the chloride concentration decreases and the third sample has a chloride concentration of ≤ 250 ppm; and,
 - ii. Three samples in which PID readings decrease and the third sample has a PID reading of ≤ 100 ppm; or,
 - iii. The sampling reaches the capillary fringe.
 - b. Lateral sampling will be conducted until the following criteria are met in the field.
 - i. A decrease is observed in chloride concentrations between lateral bores at similar depths; and,
 - ii. A chloride concentration of ≤ 250 ppm is observed in a lateral surface sample; or,
 - iii. Safety concerns impede further lateral delineation.
4. If warranted, install a monitor well to provide a direct measurement of potential groundwater impact. (All monitoring wells will be constructed per EPA, NMOCD, and industry standards).

Vac Jct F-31

5. Evaluate the risk of groundwater impact in light of the information obtained.

If the evaluation demonstrates that residual constituents pose no threat to ground water quality, then only a surface restoration plan will be proposed to OCD. If this work indicates that there is a present or future risk of impacting groundwater quality from past operations at this location, then a corrective action plan (CAP) will be developed and proposed to OCD.

Thank you for your time and consideration on this project. Please call Hack Conder at (575) 393-9174 or myself if you have any questions or wish to discuss this project.

Sincerely,

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

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

Copy: Rice Operating Company

Attachments: Junction Box Disclosure Report

Vac Jct F-31

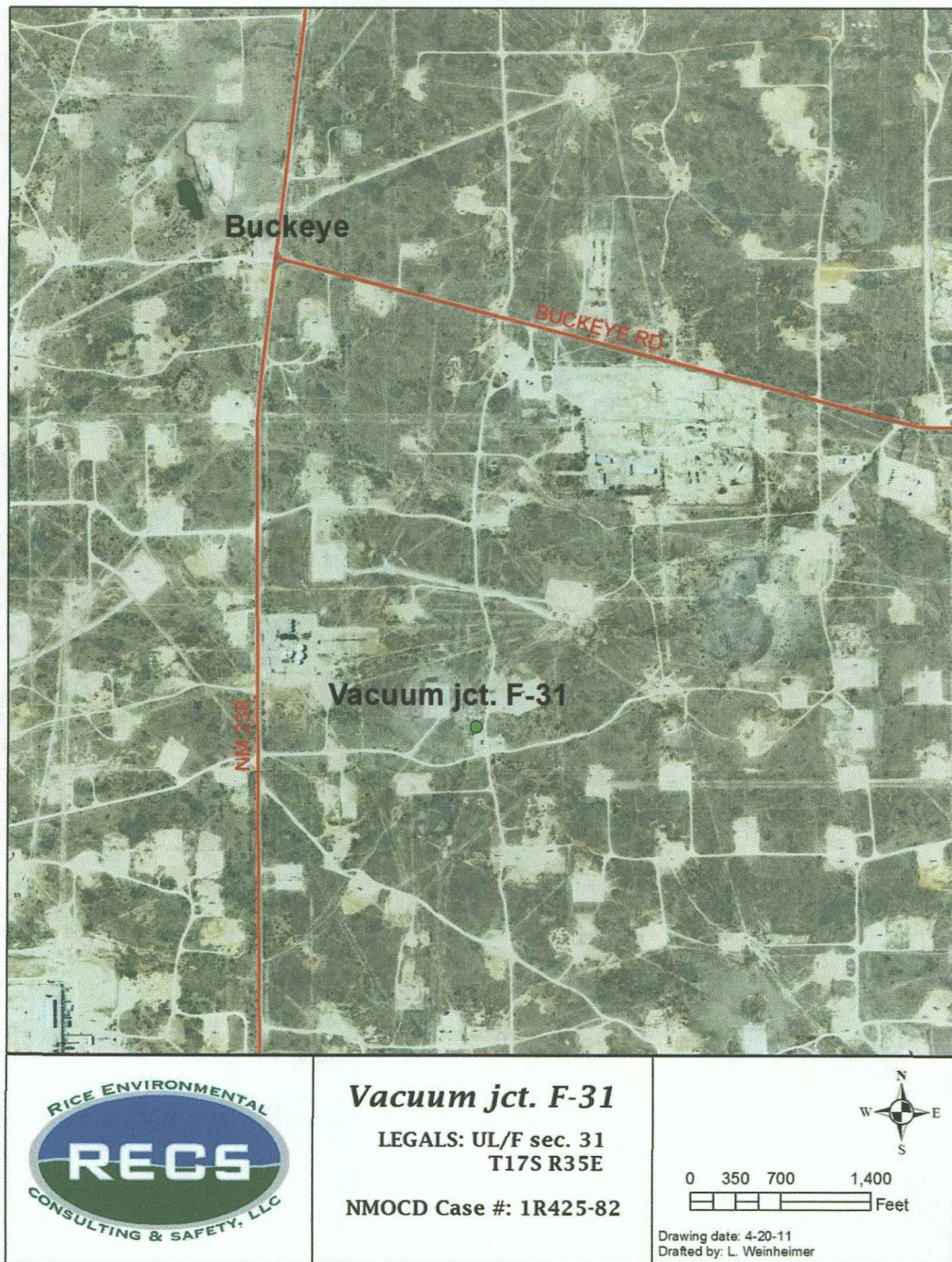


Figure 1 – Site location map.



Junction Box Disclosure Report

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

**RICE OPERATING COMPANY
JUNCTION BOX DISCLOSURE* REPORT**

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
Vacuum	Jct. F-31	F	31	17S	35E	Lea	Length	Width	Depth
							eliminated		

LAND TYPE: BLM _____ STATE X FEE LANDOWNER _____ OTHER _____

Depth to Groundwater 106 feet NMOCD SITE ASSESSMENT RANKING SCORE: 30*

Date Started 2/17/2009 Date Completed 4/7/2009 OCD Witness no

Soil Excavated 66.7 cubic yards Excavation Length 10 Width 15 Depth 12 feet

Soil Disposed 72 cubic yards Offsite Facility Sundance and CRI Location Eunice and Hobbs, NM

FINAL ANALYTICAL RESULTS: Sample Date 3/10/2009, 3/11/2009, 3/24/2009 Sample Depth 12 ft

Procure 5-point composite sample of bottom and 4-point composite sample of sidewalls. TPH, BTEX and Chloride laboratory test results completed by using an approved lab and testing procedures pursuant to NMOCD guidelines.

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chlorides mg/kg
4-WALL COMP.	<0.050	<0.050	0.111	1.14	116	1,960	1,620
BOTTOM COMP.	<0.050	<0.050	1.28	3.14	206	1,680	1,010
BLENDED BACKFILL	PID = 71 (field)				67.0	1,050	1,260
BLENDED BACKFILL II	PID = 41.8 (field)				<10.0	1,300	544

General Description of Remedial Action: This junction was addressed during the Vacuum SWD System Abandonment. After the former box was removed, an investigation was conducted at the former junction box site using a backhoe to collect soil samples at regular intervals creating a 10x25x12-ft excavation. Chloride field tests performed on each sample yielded concentrations that increased with depth. Organic vapors, measured using a PID, yielded some elevated concentrations. The excavated soil was blended on site and representative composite samples were collected from the excavation bottom, walls, and blended backfill. Laboratory analysis of the representative composite samples confirmed elevated concentrations of chloride and TPH. BTEX concentrations were below NMOCD guidelines. The blended backfill was further blended on site with clean, imported soil and a representative composite sample was analyzed by a commercial laboratory. The blended backfill was returned to the excavation to ground surface and contoured to the surrounding area. On 4/30/2009, the site was seeded with a blend of native vegetation and is expected to return to a productive capacity at a normal rate. NMOCD was notified of potential groundwater impact on 3/5/2010.

*A water well is located 834 ft south of the location.

CHLORIDE FIELD TESTS

LOCATION	DEPTH	mg/kg
4-wall comp.	n/a	1,528
bottom comp.	12'	908
blended backfill	n/a	880
blended backfill II	n/a	695
background	6"	252
vertical delineation trench 15 ft West of the junction (source)	1'	425
	2'	290
	3'	478
	4'	508
	5'	651
	6'	1,986
	7'	3,227
	8'	3,796
	9'	5,032
	10'	4,018
	11'	3,749
	12'	3,087

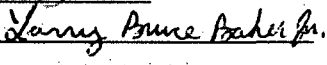
ADDITIONAL EVALUATION IS HIGH PRIORITY

enclosures: photos, lab results, PID (field) screenings, BTEX study, chloride curve

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

SITE SUPERVISOR Jordan Woodfin SIGNATURE  COMPANY RICE OPERATING COMPANY

REPORT ASSEMBLED BY Katie Jones INITIAL KJ

PROJECT LEADER Larry Bruce Baker Jr. SIGNATURE  DATE 3-18-10

*This site is a "DISCLOSURE." It will be placed on a prioritized list of similar sites for further consideration.

Vacuum Jct. F-31

Unit F, Section 31, T17S, R35E



collecting a soil sampling, facing west

2/18/2009



10x25x12-ft excavation, facing east

3/11/2009



backfilling the site, facing west

4/6/2009



seeding the backfilled site, facing west

4/30/2009



PHONE (575) 393-2325 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: JORDAN WOODFIN
122 W. TAYLOR
HOBBS, NM 88240

Receiving Date: 03/11/09
Reporting Date: 03/16/09
Project Number: NOT GIVEN
Project Name: VACUUM JCT F-31
Project Location: VACUUM JCT F-31

Sampling Date: 03/10/09
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: AB/TR


COPY

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/kg)	DRO (C ₁₀ -C ₂₈) (mg/kg)	CI* (mg/kg)
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ANALYSIS DATE	03/13/09	03/13/09	03/11/09
H17048-1 5PT. BTM COMP.	206	1,680	1,010
Quality Control	478	529	500
True Value QC	500	500	500
% Recovery	95.6	106	100
Relative Percent Difference	6.5	10.9	<0.1

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI^B

*Analysis performed on a 1:4 w:v aqueous extract.


Chemist


Date

H17048 TCL RICE

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ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: JORDAN WOODFIN
122 W. TAYLOR
HOBBS, NM 88240

Receiving Date: 03/11/09
Reporting Date: 03/12/09
Project Number: NOT GIVEN
Project Name: VACCUM JCT-31
Project Location: VACCUM JCT-31

Sampling Date: 03/10/09
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

COPY

LAB NUMBER SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE	03/11/09	03/11/09	03/11/09	03/11/09
H17048-1 5PT BTM COMP	<0.050	<0.050	1.28	3.14
H17048-2-6 COMPOSITE OF BTM GRAB PT. 1 - 5	<0.050	<0.050	1.71	3.70
Quality Control	0.049	0.049	0.048	0.144
True Value QC	0.050	0.050	0.050	0.150
% Recovery	98.0	98.0	96.0	96.0
Relative Percent Difference	3.4	4.1	5.6	6.0

METHOD: EPA SW-846 8021B

TEXAS NELAP CERTIFICATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE,
AND TOTAL XYLENES.

Chemist

Date

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 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 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.

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1001 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

ANALYSIS REQUEST									
Company Name: James Woodfin Rice Operating Co		P.O. #:		Company:		P.O. #:		ANALYSIS REQUEST	
Project Manager:		State: NY		Attn:		P.O. #:			
Address: 122 W. TAYLOR		Zip: 88240		Address:		P.O. #:			
City: HOBBS		Fax #:		City:		P.O. #:			
Phone #:		Project Owner:		State:		P.O. #:			
Project #:		Project Name: Vacuum Jet F-31		Zip:		P.O. #:			
Project Location: Vacuum Jet F-31		Sample Name: Jordan Woodfin		Phone #:		P.O. #:			
Sample Name: Jordan Woodfin		Fax #:		City:		P.O. #:			
FOR LAB USE ONLY		Project #:		State:		P.O. #:			
Lab I.D.		Sample I.D.		Matrix:		Preserv:		Sampling:	
H17048-1		5pt Blm Core		GROUNDWATER		ACID/BASE:		DATE	
-2		Blm Core		# CONTAINERS		OTHER:		TIME	
-3		Blm Core		(G)RAB OR (C)OMP.		ICE / COOL		3/10/09 7:22p	
-4		Blm Core		1		OTHER:		3/10/09 1:50p	
-5		Blm Core		1		SLUDGE		3/10/09 1:51p	
-6		Blm Core		1		OIL		3/10/09 1:52p	
				1		SOIL		3/10/09 1:53p	
				1		WASTEWATER		3/10/09 1:54p	
				1		GROUNDWATER		3/10/09 1:55p	
				1		SLUDGE		3/10/09 1:56p	
				1		OIL		3/10/09 1:57p	
				1		SOIL		3/10/09 1:58p	
				1		WASTEWATER		3/10/09 1:59p	
				1		GROUNDWATER		3/10/09 2:00p	
				1		SLUDGE		3/10/09 2:01p	
				1		OIL		3/10/09 2:02p	
				1		SOIL		3/10/09 2:03p	
				1		WASTEWATER		3/10/09 2:04p	
				1		GROUNDWATER		3/10/09 2:05p	
				1		SLUDGE		3/10/09 2:06p	
				1		OIL		3/10/09 2:07p	
				1		SOIL		3/10/09 2:08p	
				1		WASTEWATER		3/10/09 2:09p	
				1		GROUNDWATER		3/10/09 2:10p	
				1		SLUDGE		3/10/09 2:11p	
				1		OIL		3/10/09 2:12p	
				1		SOIL		3/10/09 2:13p	
				1		WASTEWATER		3/10/09 2:14p	
				1		GROUNDWATER		3/10/09 2:15p	
				1		SLUDGE		3/10/09 2:16p	
				1		OIL		3/10/09 2:17p	
				1		SOIL		3/10/09 2:18p	
				1		WASTEWATER		3/10/09 2:19p	
				1		GROUNDWATER		3/10/09 2:20p	
				1		SLUDGE		3/10/09 2:21p	
				1		OIL		3/10/09 2:22p	
				1		SOIL		3/10/09 2:23p	
				1		WASTEWATER		3/10/09 2:24p	
				1		GROUNDWATER		3/10/09 2:25p	
				1		SLUDGE		3/10/09 2:26p	
				1		OIL		3/10/09 2:27p	
				1		SOIL		3/10/09 2:28p	
				1		WASTEWATER		3/10/09 2:29p	
				1		GROUNDWATER		3/10/09 2:30p	
				1		SLUDGE		3/10/09 2:31p	
				1		OIL		3/10/09 2:32p	
				1		SOIL		3/10/09 2:33p	
				1		WASTEWATER		3/10/09 2:34p	
				1		GROUNDWATER		3/10/09 2:35p	

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

RICE OPERATING COMPANY

122 West Taylor Hobbs, NM 88240

PHONE: (575) 393-9174 FAX: (575) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

<input type="checkbox"/>
<input checked="" type="checkbox"/>

Model: PGM 7300

Model: PGM 7300

Model: PGM 7300

Serial No: 590-000183

Serial No: 590-000508

Serial No: 590-000504

Check Model Number:

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Model: PGM 7600

Model: PGM 7600

Model: PGM 7600

Serial No: 110-023920

Serial No: 110-013744

Serial No: 110-013676

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: 08-3425	EXPIRATION DATE: 10-29-09
FILL DATE: 2-29-08	METER READING ACCURACY: 100

ACCURACY : +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
Vacuum	F-31	F	31	17s	35E

SAMPLE ID	PID	SAMPLE ID	PID
5pt Btan Comp.	292		
pt 1	342		
pt 2	296		
pt 3	133		
pt 4	275		
pt 5	432		

COPY

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

SIGNATURE:

Jordan W. Wolff

DATE: 3-10-09



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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: JORDAN WOODFIN
122 W. TAYLOR
HOBBS, NM 88240

Receiving Date: 03/11/09
Reporting Date: 03/16/09
Project Number: NOT GIVEN
Project Name: VACUUM JCT F-31
Project Location: VACUUM JCT F-31

Sampling Date: 03/11/09
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: AB/TR

COPY

LAB NUMBER	SAMPLE ID	GRO (C ₈ -C ₁₀) (mg/kg)	DRO (C ₁₀ -C ₂₈) (mg/kg)	CI* (mg/kg)
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ANALYSIS DATE	03/13/09	03/13/09	03/12/09
H17050-1 4 WALL COMP.	116	1,960	1,620
H17050-6 BLENDED BACKFILL	67.0	1,050	1,260
Quality Control	478	529	500
True Value QC	500	500	500
% Recovery	95.6	106	100
Relative Percent Difference	6.5	10.9	<0.1

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B

*Analyses performed on 1:4 w/v aqueous extracts.

Cheryl Kene
Chemist

03/16/09
Date

H17050 TCL RICE

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 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.



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ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: JORDAN WOODFIN
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 03/11/09
Reporting Date: 03/16/09
Project Number: NOT GIVEN
Project Name: VACCUM JCT F-31
Project Location: VACCUM JCT F-31


Sampling Date: 03/11/09
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

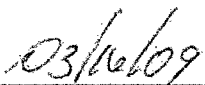
COPY

LAB NUMBER SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE	03/13/09	03/13/09	03/13/09	03/13/09
H17050-1 4 WALL COMP	<0.050	<0.050	0.111	1.14
H17050-2-5 COMPOSITE OF NORTH, SOUTH, EAST, & WEST WALLS	<0.050	<0.050	0.062	1.21
Quality Control	0.050	0.050	0.049	0.150
True Value QC	0.050	0.050	0.050	0.150
% Recovery	100	100	98	100
Relative Percent Difference	1.6	<1.0	<1.0	<1.0

METHOD: EPA SW-846 8021B

TEXAS NELAP CERTIFICATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE,
AND TOTAL XYLENES.


Chemist


Date

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 shall be barred 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 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.

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

Company Name: RICE OPERATING		P.O. #:	
Project Manager:		Company:	
Address: 122 W. TAYLOR		Attn:	
City: HOBBS		Address:	
Phone #: 593-9174		City:	
Project #: State NM Zip: 88240		State:	
Project Name: Vacuum Jet F-31		Phone #:	
Project Location: Vacuum Jet F-31		Fax #:	
Sampler Name: JORDAN WOODEN			

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	MATRIX					PRESERV		DATE	TIME
			GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE		
H17050-1	city wall comp	C 1			X				X	3/14/09	10:00A
-2	Nocturnal wall	C 1			X				X	3/14/09	9:45A
-3	southern wall	C 1			X				X	3/14/09	9:05A
-4	East Wall	C 1			X				X	3/14/09	9:33A
-5	West Wall	C 1			X				X	3/14/09	9:50A
-6	Blended Backfill	C 1			X				X	3/14/09	3:40P

FOR USE ONLY

Relinquished By: **JORDAN WOODEN** Date: **3-11-09**

Relinquished By: _____ Date: _____

Received By: **Unity Le But**

Received By: _____

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

Checked By: **Unity Le But**

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

RICE OPERATING COMPANY

122 West Taylor Hobbs, NM 88240

PHONE: (575) 393-9174 FAX: (575) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

Check Model Number:

Model: PGM 7300 Serial No: 590-000183
Model: PGM 7300 Serial No: 590-000508
Model: PGM 7300 Serial No: 590-000504

Model: PGM 7600 Serial No: 110-023920
Model: PGM 7600 Serial No: 110-013744
Model: PGM 7600 Serial No: 110-013676

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: 08-3425	EXPIRATION DATE: 8-29-09
FILL DATE: 2-29-08	METER READING ACCURACY: 100

ACCURACY: +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
Vacuum	F-31	F	31	175	35E

SAMPLE ID	PID	SAMPLE ID	PID
Chwall Comp	212	Blended Backfill	71
E. Wall	290		
W. Wall	111		
N. Wall	120		
S. Wall	175		

COPY

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

SIGNATURE

Jordan Wood

DATE: 3-11-09



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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: JORDAN WOODFIN
122 W. TAYLOR
HOBBS, NM 88240

Receiving Date: 03/24/09
Reporting Date: 03/26/09
Project Number: NOT GIVEN
Project Name: VACUUM JCT F-31
Project Location: VACUUM JCT F-31

Sampling Date: 03/24/09
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AB
Analyzed By: AB/TR

COPY

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/kg)	DRO (C ₁₀ -C ₂₈) (mg/kg)	CI ¹ (mg/kg)
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ANALYSIS DATE	03/25/09	03/25/09	03/25/09
H17114-1 BLENDED BACKFILL	<10.0	1,300	544
Quality Control	402	440	500
True Value QC	500	500	500
% Recovery	80.4	88.0	100
Relative Percent Difference	3.2	18.2	<0.1

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI¹: Std. Methods 4500-CI¹B

*Analysis performed on a 1:4 w/v aqueous extract.


Chemist


Date

H17114 TCL RICE

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 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.

122 West Taylor Hobbs, NM 88240
PHONE: (575) 393-9174 FAX: (575) 397-1471
PID METER CALIBRATION & FIELD REPORT FORM

PHONE: (575) 393-9174 FAX: (575) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

Serial No: 590-000183

Serial No: 590-000508

Serial No: 590-000504

Check Model Number:

Serial No: 110-023920

Serial No: 110-013744

Serial No: 110-013676

LOT NO: 08-3425	EXPIRATION DATE: 10-29-09
FILL DATE: 2-29-08	METER READING ACCURACY: 99.9


ACCURACY : +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
Vacuum	F-31	F	31	17S	35E

[illegible]

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

SIGNATURE

JE. 

DATE: 3-24-89

2009 BTEX Study

Revised Junction Box Upgrade Plan (2003)

System: Vacuum
Site: Jct. F-31

Date: 3/10/2009
Sampler: Jordan Woodfin

Laboratory: Cardinal
Laboratories

Location	Component	PID reading (ppm)	FIELD COMPOSITE (mg/kg)			
			Benzene	Toluene	Ethyl Benzene	Total Xylenes
4-wall composite at 10 ft x 15 ft	North Wall	120	<0.050	<0.050	0.111	1.14
	South Wall	175				
	East Wall	290				
	West Wall	111				
			LAB COMPOSITE (mg/kg)			
			<0.050	<0.050	0.062	1.21

Field PID tests <100 ppm are considered final for BTEX. If PID is >100 ppm, the components of the BTEX composite sample will be collected individually and will be composited under laboratory conditions to prevent excessive volatilization. A 15-box, 30-sample study will be made to compare field-compositing with lab-compositing BTEX samples. Composite components are collected in a skewed 'W' pattern.

Revised Junction Box Upgrade Work Plan (July 16, 2003)

2009 BTEX Study

Revised Junction Box Upgrade Plan (2003)

System: Vacuum
Site: Jct. F-31

Date: 3/10/2009
Sampler: Jordan Woodfin

Laboratory: Cardinal
Laboratories

Location	Component	PID reading (ppm)	FIELD COMPOSITE (mg/kg)			
			Benzene	Toluene	Ethyl Benzene	Total Xylenes
bottom composite at 12 ft BGS	1	342	<0.050	<0.050	1.28	3.14
	2	296				
	3	133				
	4	275				
	5	432				
			LAB COMPOSITE (mg/kg)			
			<0.050	<0.050	1.71	3.70

Field PID tests <100 ppm are considered final for BTEX. If PID is >100 ppm, the components of the BTEX composite sample will be collected individually and will be composited under laboratory conditions to prevent excessive volatilization. A 15-box, 30-sample study will be made to compare field-compositing with lab-compositing BTEX samples. Composite components are collected in a skewed 'W' pattern.

Revised Junction Box Upgrade Work Plan (July 16, 2003)

CHLORIDE CONCENTRATION CURVE

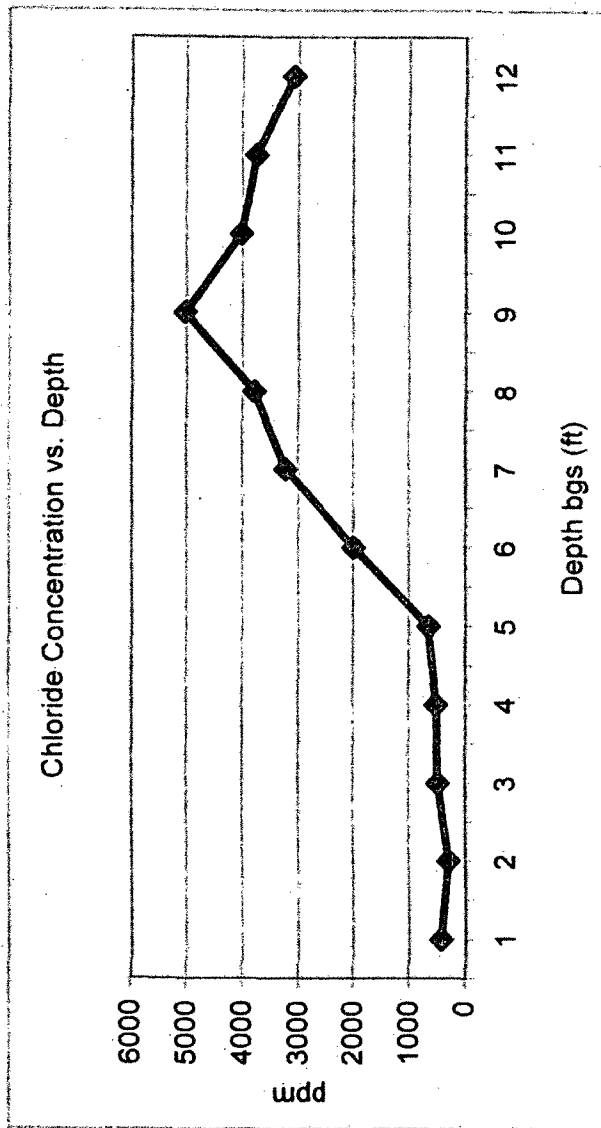
RICE Operating Company

Vacuum Jct. F-31

Unit 'F', Sec. 31, T17S, R35E

Backhoe samples at 20 ft West of the junction (source)

Depth bgs (ft)	[Cl ⁻] ppm
1	425
2	290
3	478
4	508
5	651
6	1986
7	3227
8	3796
9	5032
10	4018
11	3749
12	3087



Groundwater = 106 ft