

1R - 425-93

## WORKPLANS

Date:

2-15-13

RECEIVED

FEB 13 2013

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

**Texerra LLC**

Oil Conservation Division  
1220 S. St. Francis Drive  
20055 Laredo Ln  
Santa Fe, NM 87505  
Monument, CO 80132

E-mail: [lpg@texerra.com](mailto:lpg@texerra.com), Tel: 719-339-6791

February 15<sup>th</sup>, 2013

**Mr. Edward Hansen**

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

RECEIVED

FEB 13 2013

RE: **INVESTIGATION & CHARACTERIZATION PLAN (ICP)**  
**Rice Operating Company – Vacuum SWD System**  
**Vacuum J-32 EOL: UL J, Sec. 32, T17S, R35E**  
**NMOCD Case Number: 1R425-93**

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

Sent via Certified U.S. Mail w/ Return Receipt No. 7011 0110 0002 5197 1365

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.

## Vacuum J-32 EOL

### Background and Previous Work

This site is located approximately 1 ¼ mile SE of Buckeye, New Mexico in UL J, Sec. 32, T17S, R35E as shown on the Site Location Map (Appendix). NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 74 +/- feet.

In 2010, ROC initiated work on the former Vacuum J-32 EOL junction box as part of the system abandonment. The former junction box and surrounding soil was removed from an excavation of approximate dimensions 30 ft by 30 ft by 12 ft deep. Soil samples were collected at regular intervals and field-screened for chloride and hydrocarbon concentrations. A 4-wall composite sample and a bottom composite sample were analyzed by a commercial laboratory for chloride and TPH. Residual soil hydrocarbons were negligible (< 50 mg/kg) in all samples. Residual chlorides were 1,720 mg/kg in the 4-wall composite and 2,400 mg/kg in the bottom composite sample.

The excavated soil was blended on site and a composite sample was analyzed by a commercial laboratory, resulting in a chloride concentration of 1,380 mg/kg, a GRO concentration below detectable limits, and DRO concentration of 29.4 mg/kg. The blended backfill was returned to the excavation, and a 20-mil synthetic impermeable liner was installed at 4 ft bgs. Clean, imported soil was used to backfill above the liner and the surface was returned to the natural contour and seeded. NMOCD was notified of potential groundwater impact on February 21, 2011, and a Junction Box Disclosure Report (Appendix) was submitted to the NMOCD with all the 2010 junction box closures and disclosures.

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. Conduct vertical and lateral delineation of residual soil chlorides and 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  $\leq 250$  ppm; and,
    - ii. Three samples in which PID readings decrease and the third sample has a PID reading of  $\leq 100$  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  $\leq 250$  ppm is observed in a lateral surface sample; or,
    - iii. Safety concerns impede further lateral delineation.
2. If warranted, install a monitor well to provide direct measurement of the potential groundwater impact at the site. Additional monitoring wells may be required to fully delineate groundwater quality. (All monitor wells will be installed by EPA, NMOCD, and industry standards.)
3. Evaluate the risk of groundwater impact based on the information obtained.

**Vacuum J-32 EOL**

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

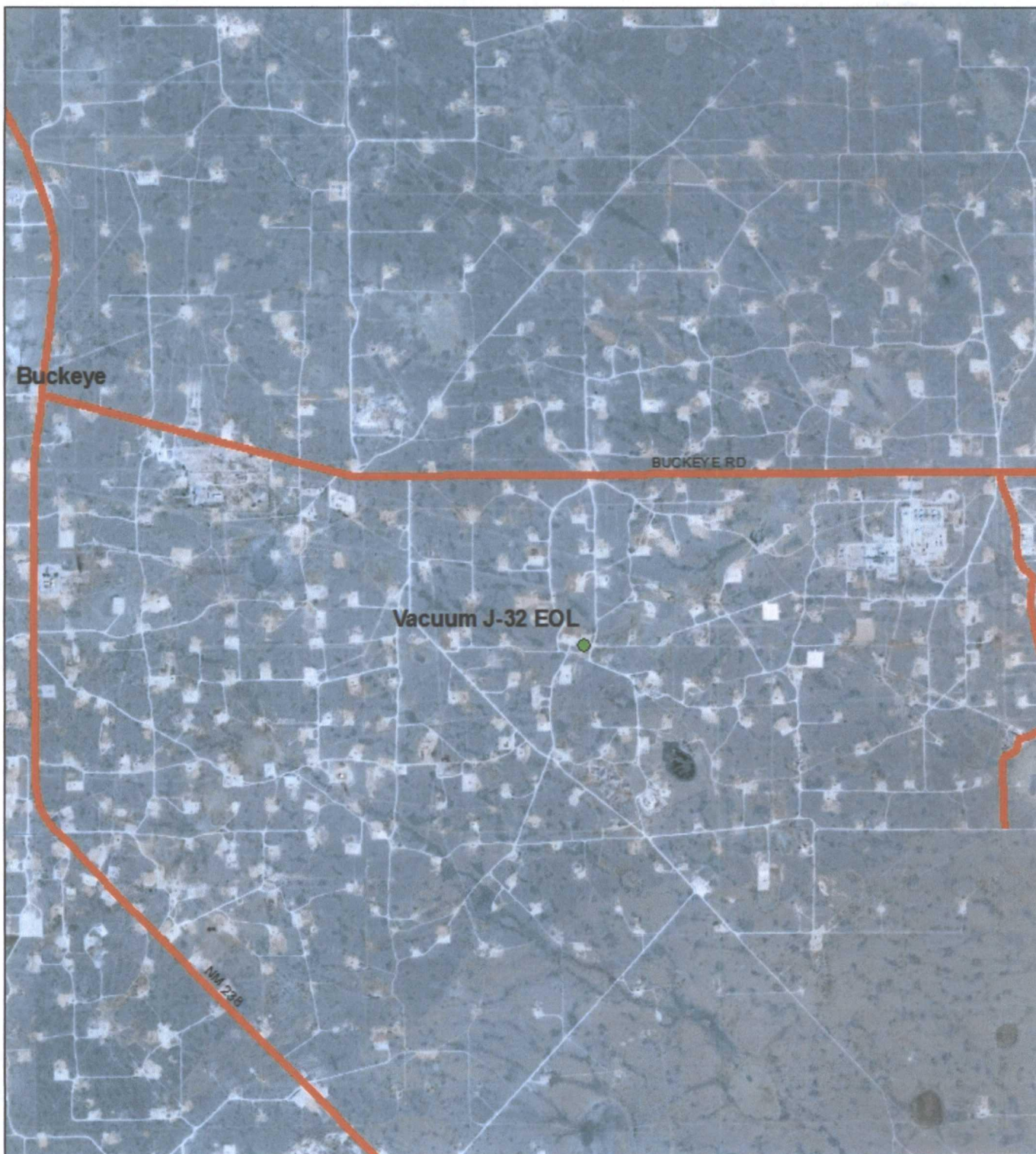
Attachments: Appendix

## **APPENDIX**

✓ **Site Location Map**

✓ **Project Disclosure**

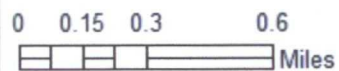
- **Junction Box Disclosure Report**
- **Photographs**
- **Laboratory Report**
- **PID Sheet**
- **Excavation Cross Section w/ Synthetic Liner**
- **Soil Chloride vs Depth**



## ***Vacuum J-32 EOL***

Unit J, Section 32, T17S, R35E  
LEA COUNTY, NM

NMOCD Case #: 1R425-93



Drawing date: 7-25-12  
Drafted by: L. Weinheimer



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

BOX LOCATION							BOX DIMENSIONS - FEET		
SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	Length	Width	Depth
Vacuum	J-32 EOL	J	32	17S	35E	Lea	eliminated		

LAND TYPE: BLM \_\_\_\_\_ STATE X FEE LANDOWNER \_\_\_\_\_ OTHER \_\_\_\_\_

Depth to Groundwater 74' feet NMOCD SITE ASSESSMENT RANKING SCORE: 10

Date Started 4/16/2010 Date Completed 6/17/2010 OCD Witness no

Soil Excavated 400.0 cubic yards Excavation Length 30 Width 30 Depth 12 feet

Soil Disposed 254 cubic yards Offsite Facility Sundance Location Eunice, NM

FINAL ANALYTICAL RESULTS: Sample Date 5/25/2010 Sample Depth 12 ft

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

**CHLORIDE FIELD TESTS**

Sample Location	PID (field) ppm	GRO mg/kg	DRO mg/kg	Chloride mg/kg
4-WALL COMP.	1.4	<10.0	<10.0	1,720
BOTTOM COMP.	0.09	<10.0	27.1	2,400
BLENDED BACKFILL	0.08	<10.0	29.4	1,380

LOCATION	DEPTH	mg/kg
4-wall comp.	n/a	1,261
bottom comp.	12'	1,615
blended backfill	n/a	826
background	6"	170
vertical delineation 15 ft. west of junction (source)	2'	685
	4'	531
	6'	906
	8'	1,037
	10'	997
	12'	818

**General Description of Remedial Action:** This junction box was addressed during the Vacuum SWD System abandonment. An investigation was conducted at the former junction box using a backhoe to collect soil samples at regular intervals creating a 30x30x12-ft. deep excavation. Chloride field tests were performed on each sample which yielded elevated concentrations that did not relent with depth. Organic vapors were measured using a PID, which yielded low concentrations. The excavated soil was blended on site and representative samples were collected from the blended

backfill, the bottom of the excavation, and excavation walls. The representative samples were sent to a commercial laboratory for analysis of chloride and TPH. The blended backfill was returned to the excavation to 4.5 ft. below ground surface (BGS). At 4 ft. BGS a 20 ml. plastic liner was installed with six inch pad of blow sand below and above liner. The remaining blended backfill was hauled off to a NMOCD approved facility. The remaining excavation was backfilled with clean imported soil to ground surface and contoured to the surrounding area. On 6/17/2010, 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 2/21/2011.

**ADDITIONAL EVALUATION IS MEDIUM PRIORITY**

enclosures: photos, lab results, PID (field) screenings, cross-section, chloride curve

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

SITE SUPERVISOR Robert Egans SIGNATURE *Robert Egans* COMPANY RICE OPERATING COMPANY

REPORT ASSEMBLED BY Zach Conder INITIAL *Z.C.*

PROJECT LEADER Larry Bruce Baker Jr. SIGNATURE *Larry Bruce Baker Jr.* DATE 3-2-11

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

# Vacuum J-32 EOL

Unit J, Section 32, T17S, R35E



Site prior to excavating, facing southeast

4/15/2010



Collecting a soil sample, facing west

4/30/2010





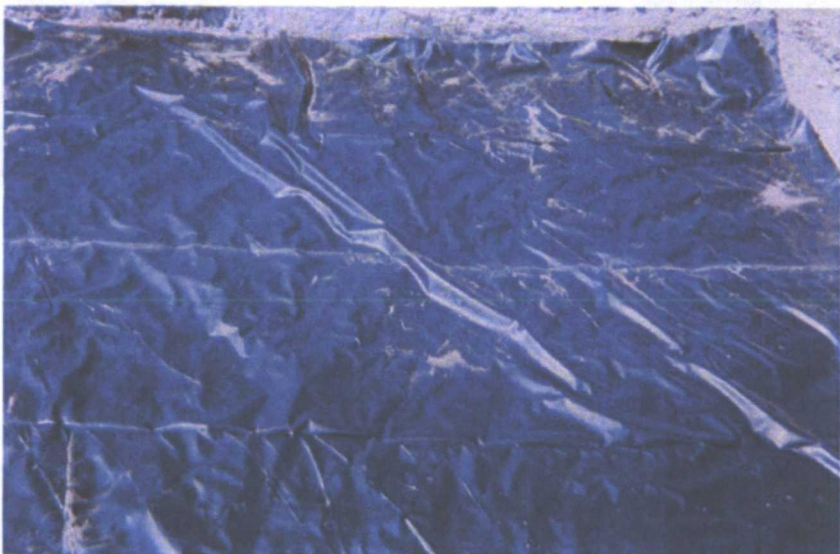
Backfilling excavation to 4.5-ft. BGS

6/02/2010



Hauling in fresh soil

6/02/2010



Installed 20 ml. plastic liner

6/03/2010



Seeding backfilled site

6/17/2010



# ARDINAL LABORATORIES

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

May 27, 2010

Bruce Baker  
Rice Operating Company  
112 West Taylor  
Hobbs, NM 88240

Re: Vacuum J-32 EOL (17/35)

Enclosed are the results of analyses for sample number H19970, received by the laboratory on 05/26/10 at 8:30 am.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

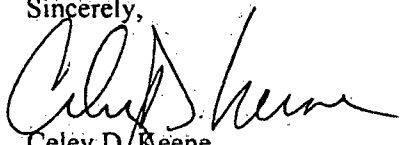
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.2	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

  
Celestine D. Keene  
Laboratory Director

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This report conforms with NELAP requirements.



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

ANALYTICAL RESULTS FOR  
RICE OPERATING COMPANY  
ATTN: BRUCE BAKER  
112 W. TAYLOR  
HOBBS, NM 88240

Receiving Date: 05/26/10  
Reporting Date: 05/27/10  
Project Number: NOT GIVEN  
Project Name: VACUUM J-32 EOL (17/35)  
Project Location: VACUUM J-32 EOL (17/35)

Sampling Date: 05/25/10  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: JH  
Analyzed By: AB/HM

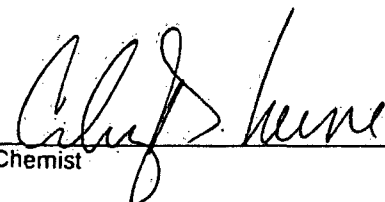
LAB NUMBER	SAMPLE ID	GRO	DRO	CI*
		(C <sub>6</sub> -C <sub>10</sub> ) (mg/kg)	(>C <sub>10</sub> -C <sub>28</sub> ) (mg/kg)	(mg/kg)

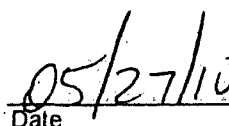
ANALYSIS DATE	05/26/10	05/26/10	05/27/10
H19970-1 5PT BOTTOM COMP. @ 12'	<10.0	27.1	2,400
H19970-2 4-WALL COMP.	<10.0	<10.0	1,720
H19970-3 BLENDED BACKFILL	<10.0	29.4	1,380
Quality Control	486	488	500
True Value QC	500	500	500
% Recovery	97.2	97.6	100
Relative Percent Difference	1.1	5.1	

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

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

Reported on wet weight.

  
Chemist

  
Date

H19970 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.



# 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 7230

Serial No: 592-903318

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: <b>928547</b>	EXPIRATION DATE: <b>2-4-2013</b>
FILL DATE: <b> </b>	METER READING ACCURACY: <b>100ppm</b>

ACCURACY : +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
Vacuum	I-32 EOL	I	32	17	35

SAMPLE ID	PID	SAMPLE ID	PID
15' East 2'	1.2	5pt. Bottom Composite	.09
4'	1.7		
6'	1.8	4-Wall Composite	1.4
8'	0.1		
10'	0	Blended Backfill	.08
12'	0		
15' West 2'	2.8		
4'	4.7		
6'	0.03		
8'	1		
10'	0.1		
12'	0		

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

SIGNATURE: *Robert Spurr*

DATE: **5-25-2010**



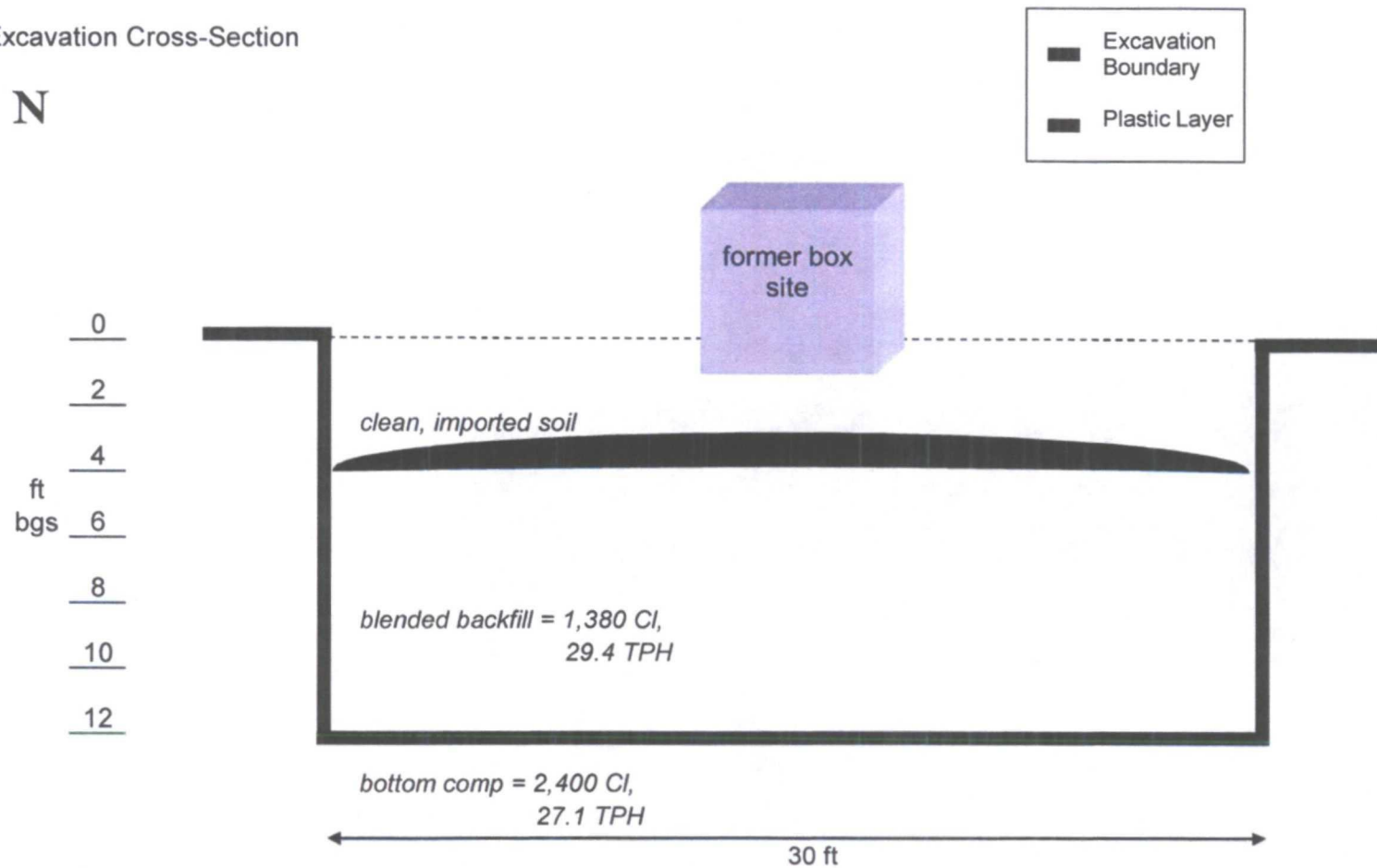
# Vacuum J-32 EOL

Unit 'J', Section 32, T17S, R35E

Excavation Cross-Section

N

S



## CHLORIDE CONCENTRATION CURVE

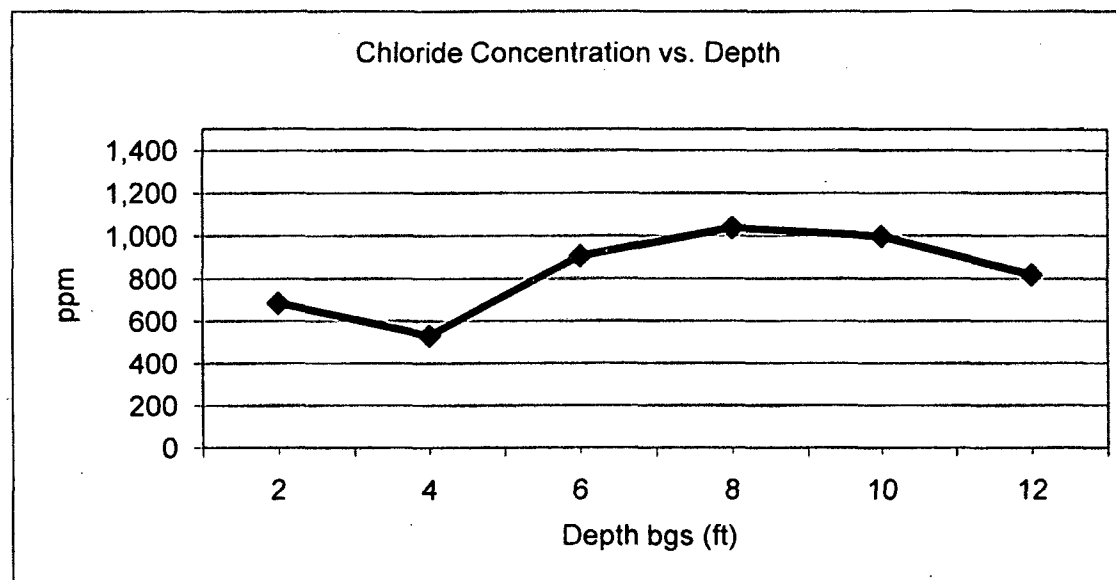
RICE Operating Company

### Vacuum J-32 EOL

Unit 'J', Sec. 32, T17S, R35E

Backhoe samples at 15 ft West of the junction (source)

Depth bgs (ft)	[Cl] ppm
2	685
4	531
6	906
8	1,037
10	997
12	818



Groundwater = 74 ft