

1R - 425-87

WORKPLANS

Date:

4-17-12

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

Texerra LLC

20055 Laredo Lane Monument, Colorado 80132

Tel: 719-339-6791 E-mail: lpg@texerra.com

April 17th, 2012

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

APR 25 2012

RE: **Corrective Action Plan (CAP)**

Rice Operating Company – Vacuum SWD System

Vacuum Jct N-28-1: UL/N, Sec. 28, T17S, R35E (formerly Vacuum Jct K-28-1)

NMOCD Case Number: 1R425-87

Oil Conservation Division

1220 S. St. Francis Drive

Santa Fe, NM 87505

Sent via Certified U.S. Mail w/ Return Receipt No. 7011 0110 0001 5863 4875

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. This report summarizes work to date completed per the OCD-approved Investigation and Characterization Plan of May 2nd, 2011 for this site.

The location of the Vacuum Jct N-28-1 site is given in Figure 1. A summary of soil boring analyses from samples taken in June and July 2011 are given in Figure 2.

Residual soil chlorides are high in the at-source soil boring (SB-2) from the surface to a depth of 65 ft bgs. The depth to groundwater at this site is approximately 68 ft below ground surface (bgs). The lateral extent of residual soil chlorides was defined by SB-3 to the west, SB-8 to the north and SB-6 to the south where a three-point decline (with the lowest sample testing less than 250 mg/kg) was found in the lowest intervals sampled. The easterly extent was defined by SB-4, where chloride concentrations decreased from 4,000 mg/kg to 432 mg/kg at 65 ft bgs. SB-9, drilled east of SB-4, is encroaching upon an abandoned lease facility (Figure 3). Residual soil petroleum hydrocarbons were generally negligible in each of the soil bores. Petroleum hydrocarbons were therefore determined not to be of concern.

It should be noted that site is located within the immediate vicinity of oil field facilities having a long history with apparent surface spillage (Figures 4 to 9) and that the elevated levels of residual soil chlorides are likely due to activities not directly caused by ROC operations. Nevertheless, in order to protect groundwater quality from the potential migration of residual soil chlorides ROC proposes the following actions to serve as a Corrective Action Plan (CAP) for this project. *These measures will provide protection beyond the impacts directly caused by past operation of the Vacuum Jct N-28-1 junction box.*

Vacuum Jct N-28-1

ROC will:

Install a 20-mil Reinforced Sub-surface Infiltration Barrier and Restore the Ground Surface

- Excavate the area encompassed by the soil borings (48 by 96 ft as shown in Figure 10) to a depth of approximately 3 ft bgs (limited by the presence of hard rock). Due to the close proximity between this location and the ROC Vacuum N-28 vent location, the excavation and liner will encompass the affected areas of both former boxes.
- Install a 20-mil, reinforced poly liner over a 6 inch layer of clean blow sand and pad this with another 6 inch layer of the same (aerial view given in Figure 10).
- The excavation will then be backfilled with soil that chlorides measure less than 500 mg/kg and PID hydrocarbons measure less than 100 ppm. Excavated soil will be evaluated for use as backfill, and any soil requiring disposal will be properly disposed of at a NMOCD approved facility.
- Restore the ground surface to natural contours and seed with a blend of native vegetation mix.

Report Course and Results of Work to NMOCD

- Provide a brief report with photographs summarizing the course of these corrective actions to NMOCD following their completions with a request for remediation termination. Please note that we do not anticipate the need for, nor propose to, install any monitor wells as our proposed liner system will provide effective protection of groundwater from residual chlorides at this former ROC junction box. It is likely that any chlorides in groundwater above natural baseline levels are caused by historical sources up-gradient of and surrounding this former junction box. Historical aerial photos given in Figures 4 through 9 illustrate oil-field impacts of non-ROC facilities surrounding the location of this former box. This is particularly clear in the 1966 and 1949 historical aerial photos.

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

We appreciate your consideration of this Corrective Action Plan. Please do not hesitate to contact either Hack Conder of Rice Operating Company or myself if you have any questions or need additional information.

Sincerely,



L. Peter Galusky, Jr. Ph.D.

Copy: Rice Operating Company

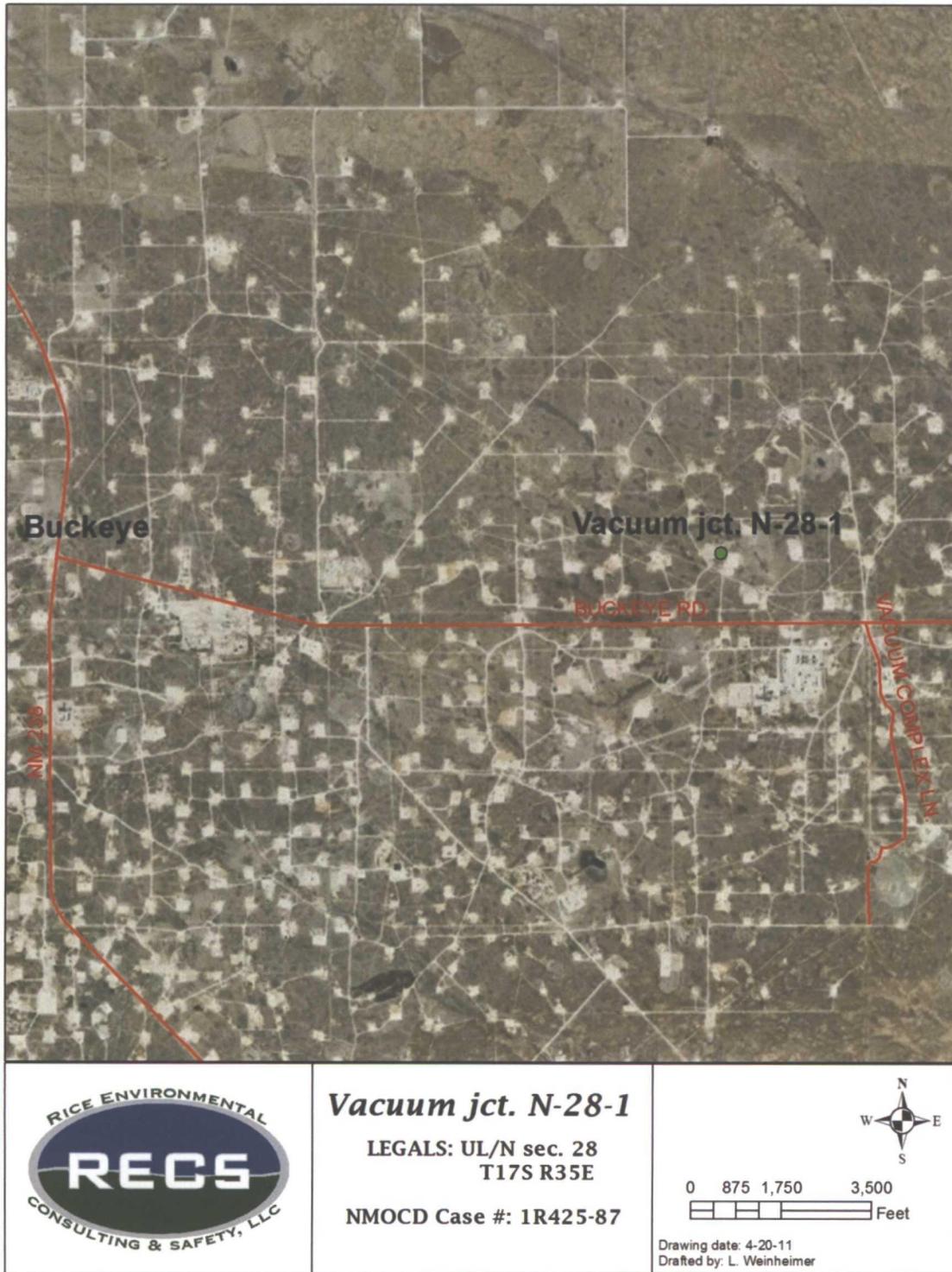


Figure 1 – Vacuum Jct N-28-1 location.

Soil bore installation

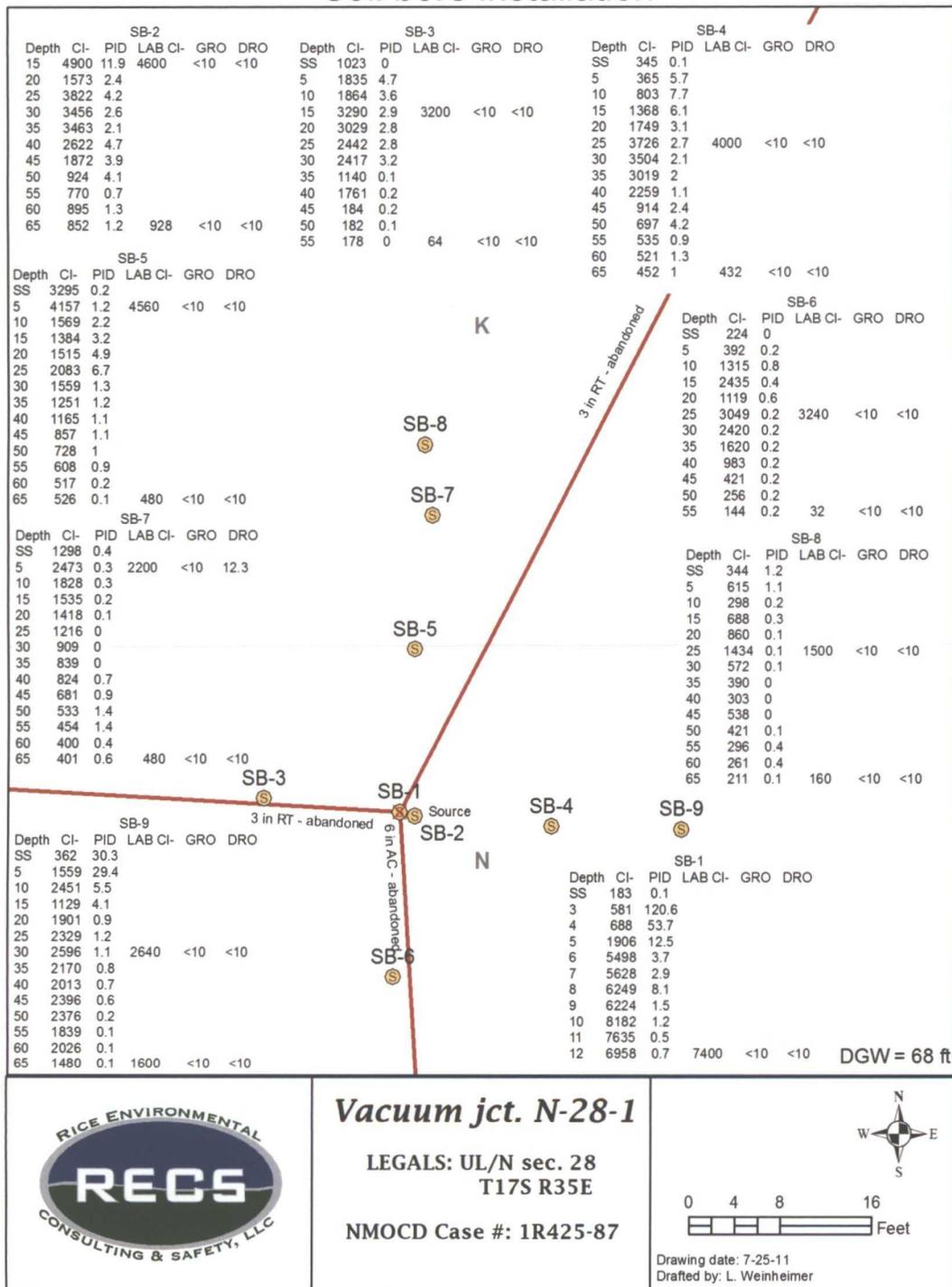


Figure 2 – Vacuum Jct N-28-1 summary of soil boring sampling locations and analyses.

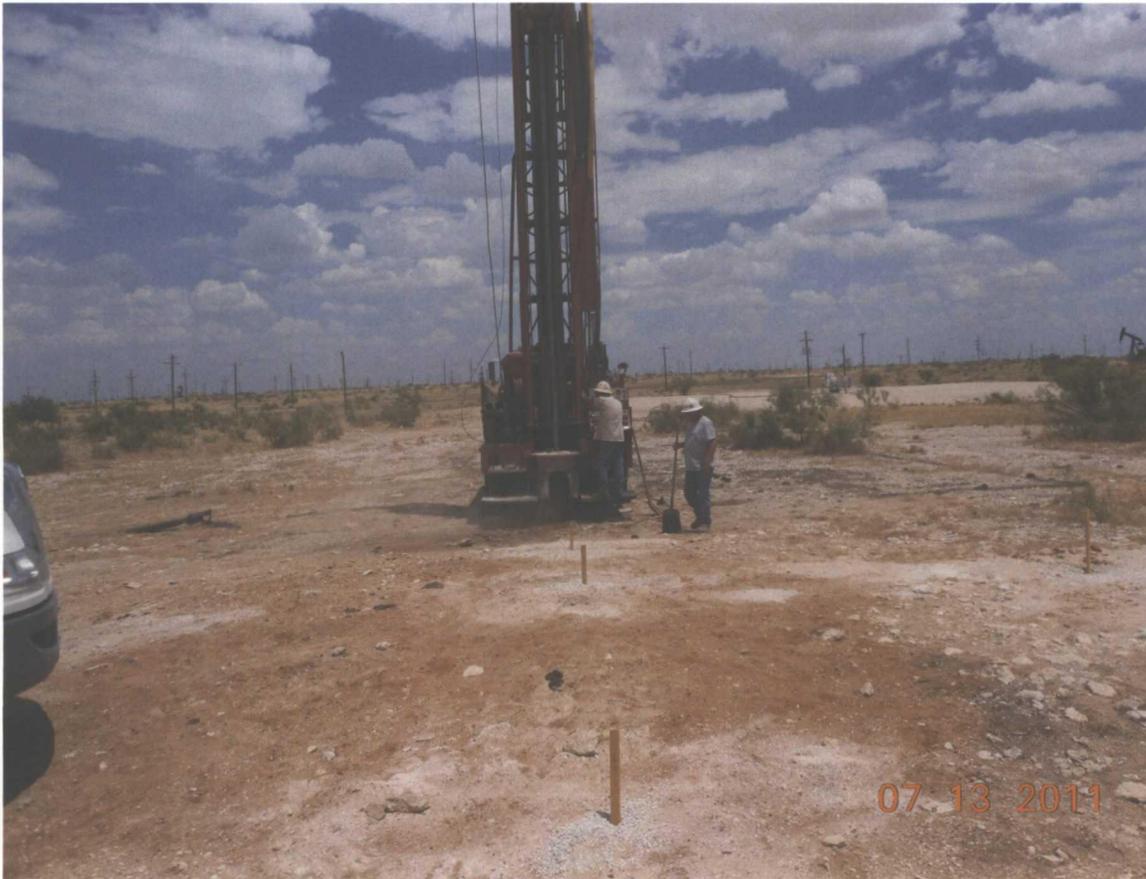


Figure 3 – Abandoned lease facility, next to SB-9.

2011

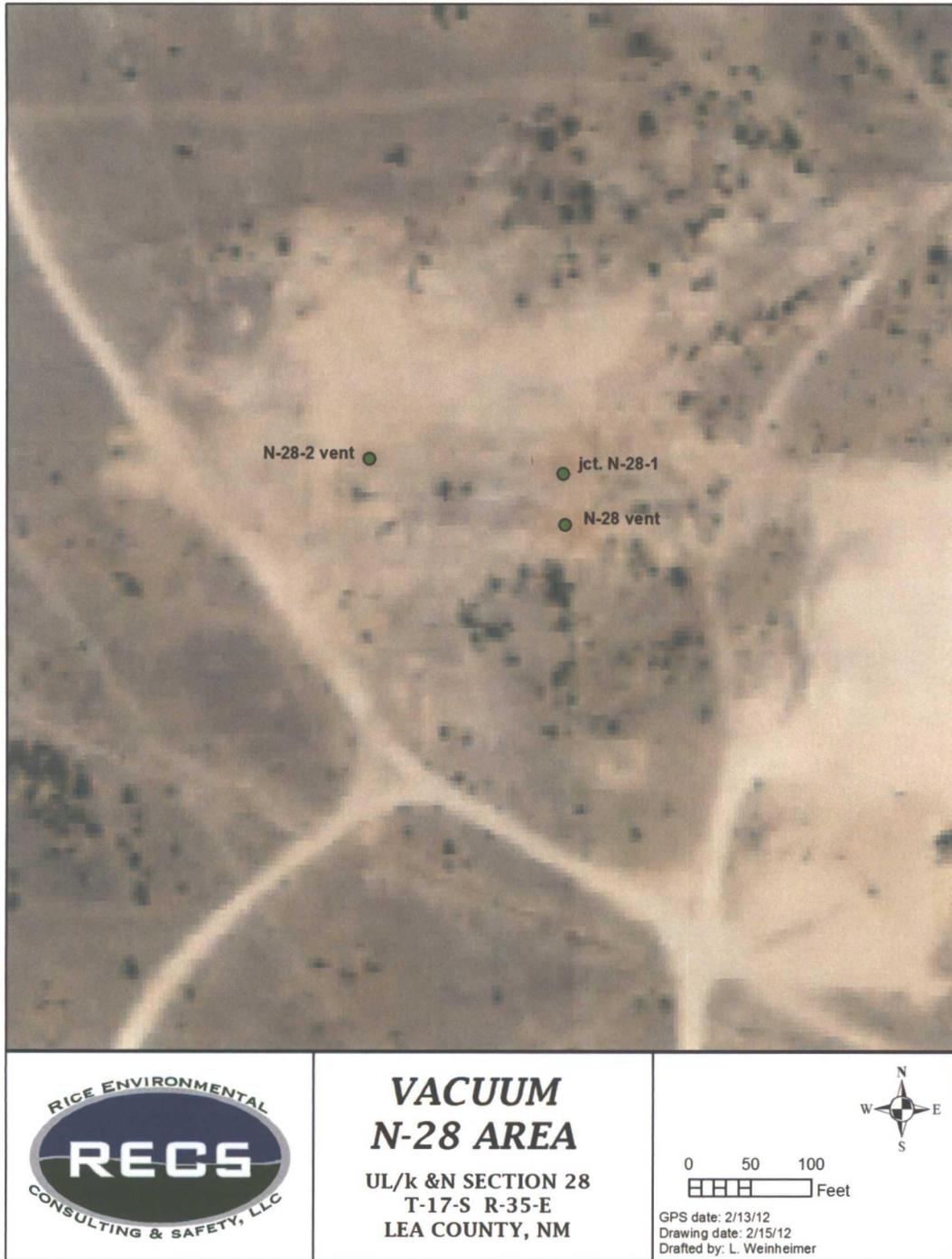


Figure 4 – Aerial of Vacuum Jct N-28-1 location in 2011.

2009



Figure 5 – Aerial of Vacuum Jct N-28-1 location in 2009.

2005



Figure 6 – Aerial of Vacuum Jct N-28-1 location in 2005.

1978

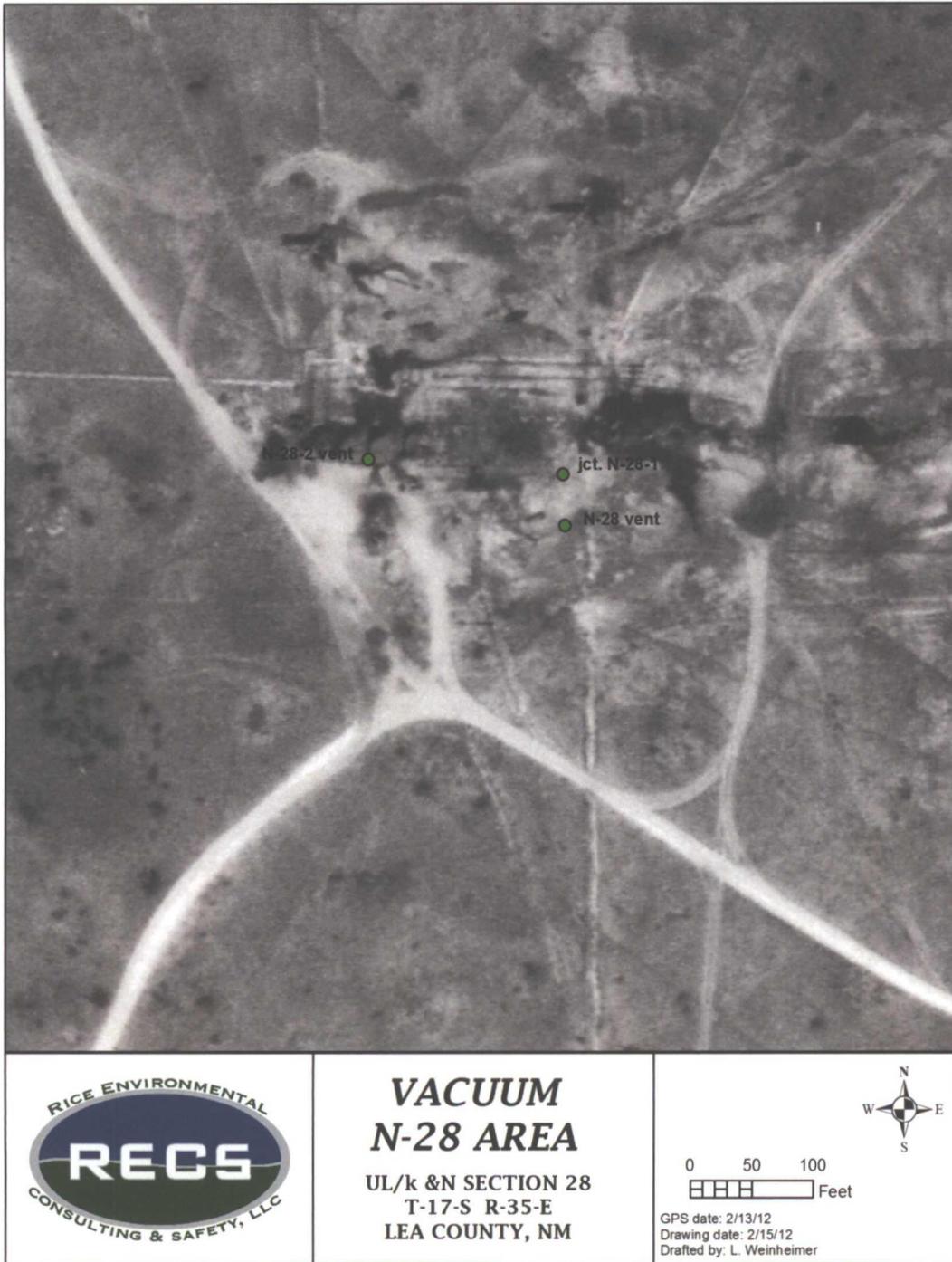


Figure 7 – Aerial of Vacuum Jct N-28-1 location in 1978.

1966

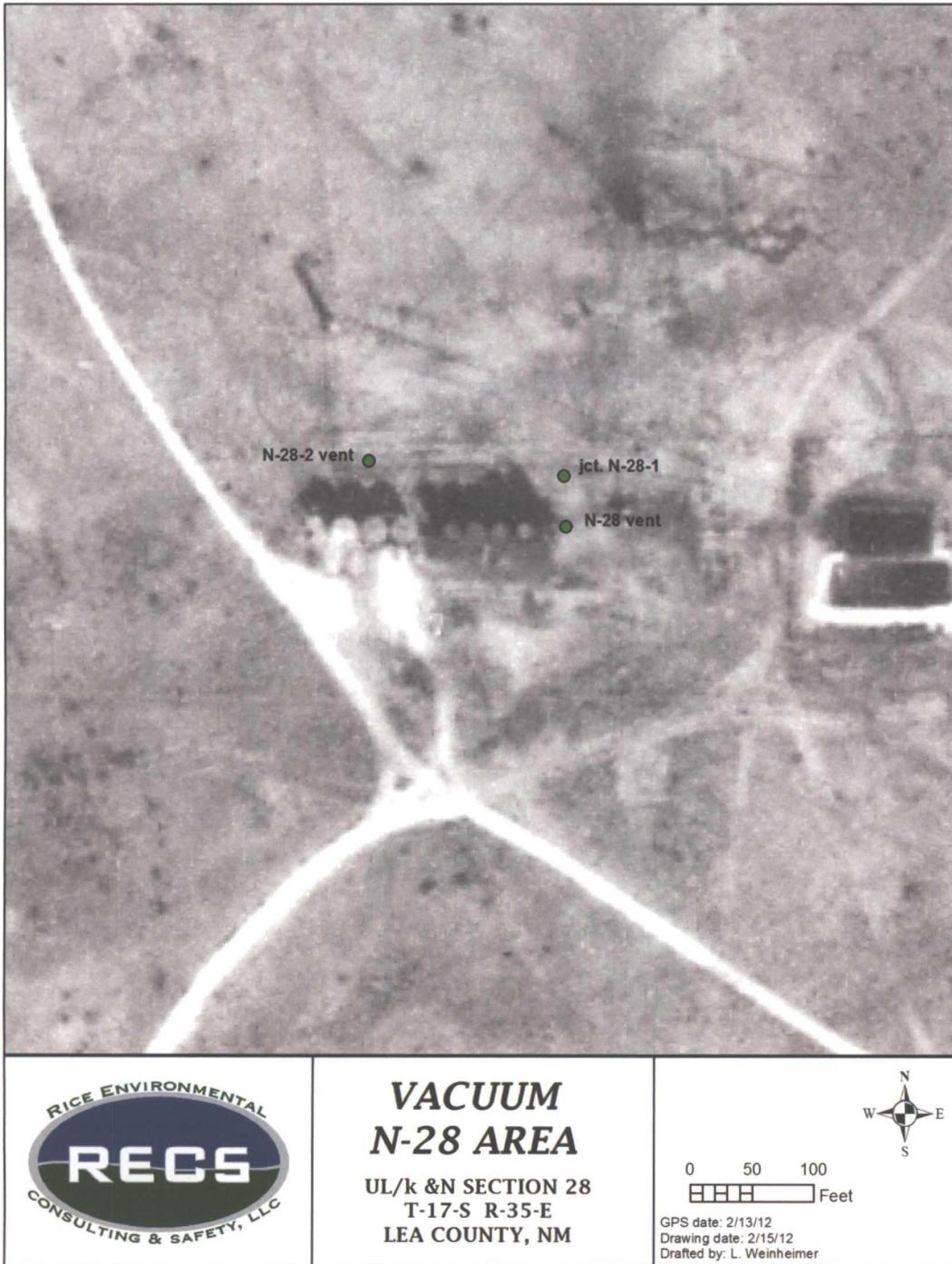


Figure 8 – Aerial of Vacuum Jct N-28-1 location in 1966.

1949

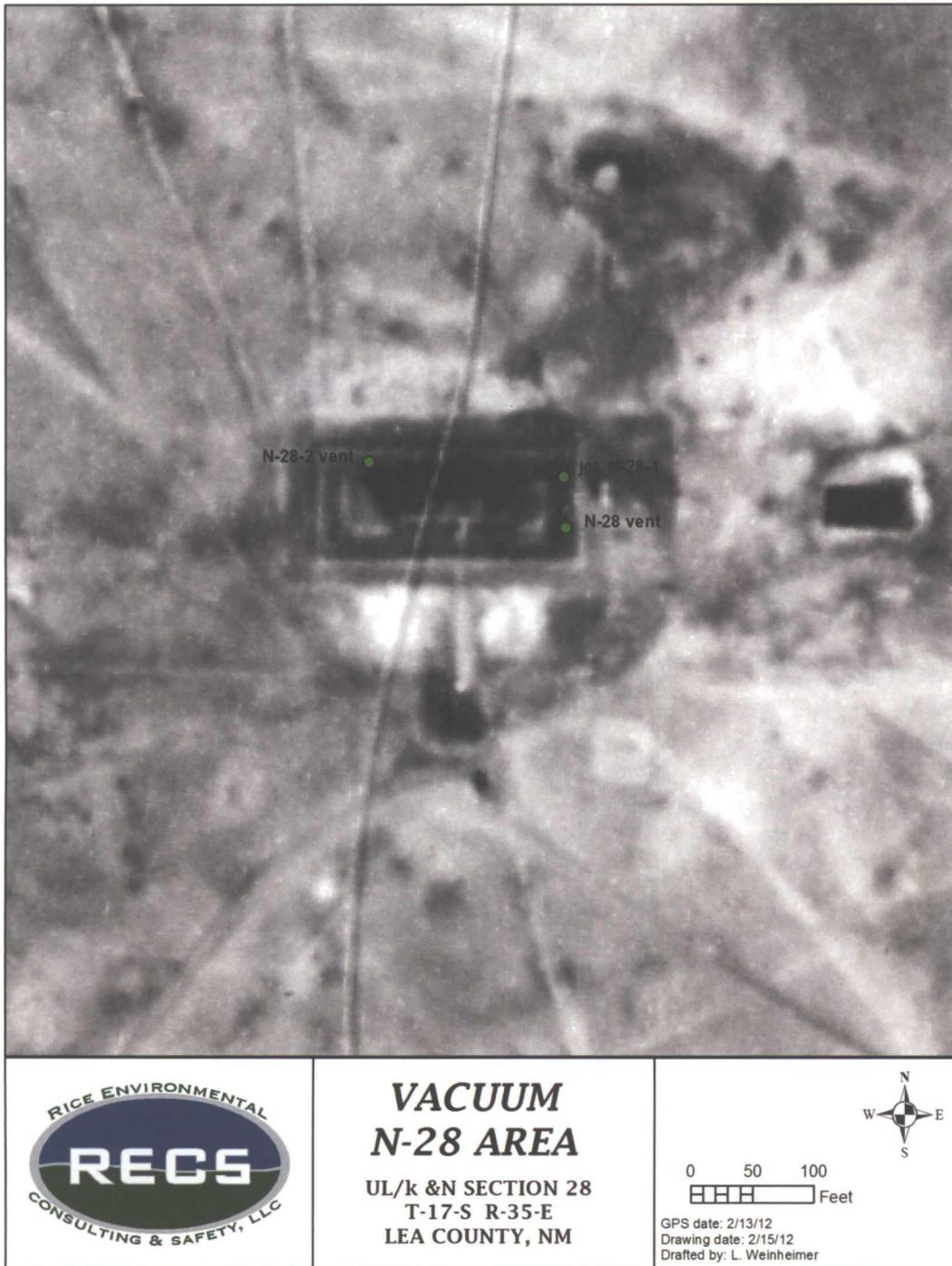


Figure 9 – Aerial of Vacuum Jct N-28-1 location in 1949.

Vacuum Jct N-28-1

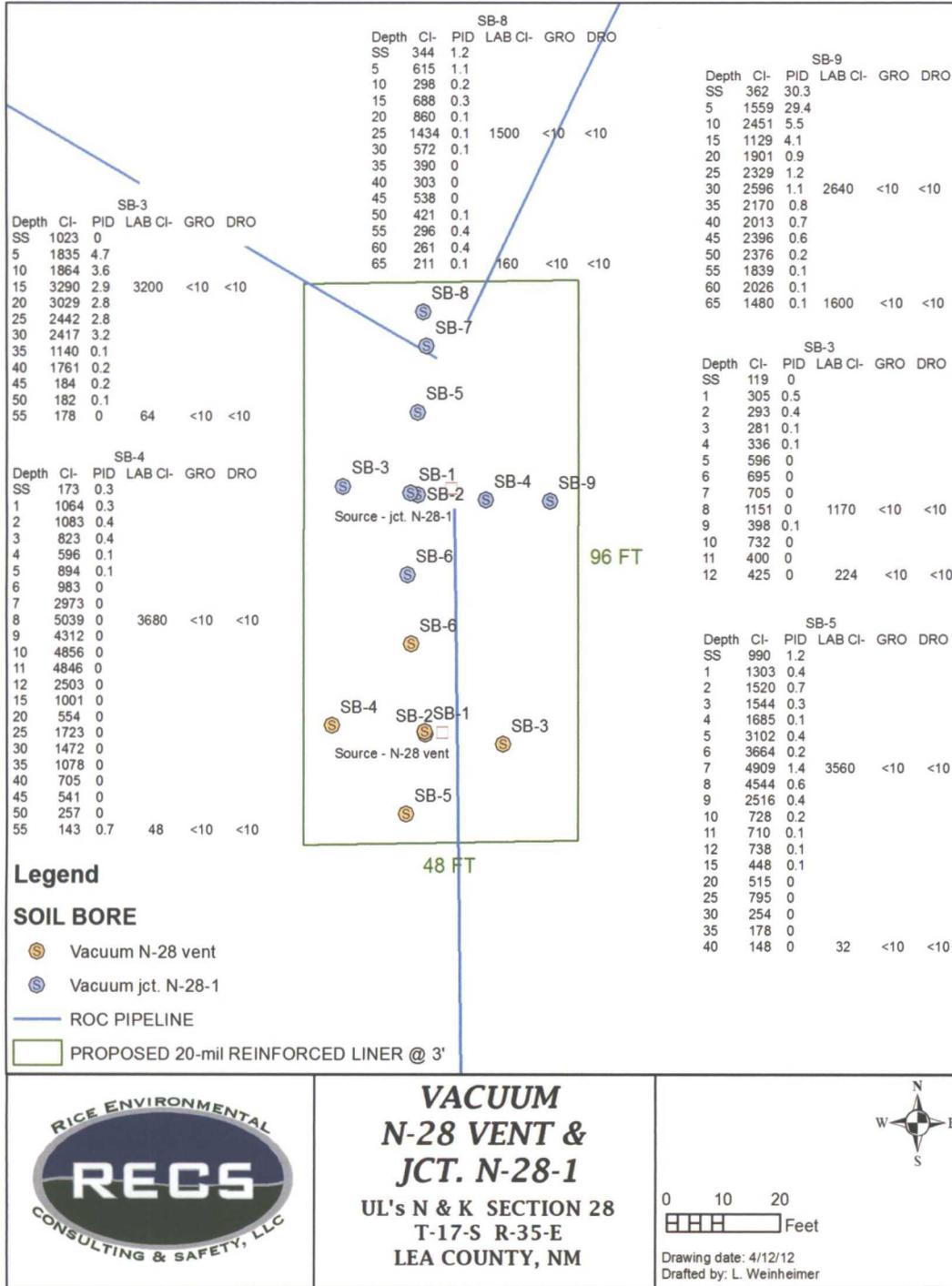


Figure 10 - Soil boring locations and analysis summary and surface footprint of proposed excavation and sub-surface synthetic infiltration barrier. Due to the close proximity of this location and the ROC Vacuum N-28 vent location, the excavation and liner will encompass the affected areas of both former junction boxes.



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

June 17, 2011

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

RE: VACUUM JCT N-28-1

Enclosed are the results of analyses for samples received by the laboratory on 06/10/11 16:20.

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 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene
Lab Director/Quality Manager



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:	06/10/2011	Sampling Date:	06/09/2011
Reported:	06/17/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT N-28-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 2 @ 15' (H101212-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4600	16.0	06/14/2011	ND	432	108	400	7.14		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/15/2011	ND	154	76.9	200	3.51		
DRO >C10-C28	<10.0	10.0	06/15/2011	ND	152	75.8	200	3.11		
Surrogate: 1-Chlorooctane		86.5 %	70-130							
Surrogate: 1-Chlorooctadecane		110 %	70-130							

Sample ID: SB 2 @ 65' (H101212-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	928	16.0	06/14/2011	ND	432	108	400	7.14		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/15/2011	ND	154	76.9	200	3.51		
DRO >C10-C28	<10.0	10.0	06/15/2011	ND	152	75.8	200	3.11		
Surrogate: 1-Chlorooctane		73.1 %	70-130							
Surrogate: 1-Chlorooctadecane		95.9 %	70-130							

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/10/2011	Sampling Date:	06/09/2011
Reported:	06/17/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT N-28-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 3 @ 15' (H101212-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3200	16.0	06/14/2011	ND	432	108	400	7.14		

TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/15/2011	ND	154	76.9	200	3.51		
DRO >C10-C28	<10.0	10.0	06/15/2011	ND	152	75.8	200	3.11		

Surrogate: 1-Chlorooctane 73.4 % 70-130
 Surrogate: 1-Chlorooctadecane 94.3 % 70-130

Sample ID: SB 3 @ 55' (H101212-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	06/14/2011	ND	432	108	400	7.14		

TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/15/2011	ND	154	76.9	200	3.51		
DRO >C10-C28	<10.0	10.0	06/15/2011	ND	152	75.8	200	3.11		

Surrogate: 1-Chlorooctane 80.0 % 70-130
 Surrogate: 1-Chlorooctadecane 103 % 70-130

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

Received:	06/10/2011	Sampling Date:	06/09/2011
Reported:	06/17/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT N-28-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 4 @ 25" (H101212-05)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4000	16.0	06/14/2011	ND	432	108	400	7.14		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/15/2011	ND	154	76.9	200	3.51		
DRO >C10-C28	<10.0	10.0	06/15/2011	ND	152	75.8	200	3.11		
Surrogate: 1-Chlorooctane		74.8 %	70-130							
Surrogate: 1-Chlorooctadecane		98.5 %	70-130							

Sample ID: SB 4 @ 65' (H101212-06)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	432	16.0	06/14/2011	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/15/2011	ND	154	76.9	200	3.51		
DRO >C10-C28	<10.0	10.0	06/15/2011	ND	152	75.8	200	3.11		
Surrogate: 1-Chlorooctane		69.6 %	70-130							
Surrogate: 1-Chlorooctadecane		91.9 %	70-130							

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/10/2011	Sampling Date:	06/09/2011
Reported:	06/17/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT N-28-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 5 @ 5' (H101212-07)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4560	16.0	06/14/2011	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/15/2011	ND	154	76.9	200	3.51		
DRO >C10-C28	<10.0	10.0	06/15/2011	ND	152	75.8	200	3.11		
Surrogate: 1-Chlorooctane	70.1 %	70-130								
Surrogate: 1-Chlorooctadecane	88.7 %	70-130								

Sample ID: SB 5 @ 65' (H101212-08)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	06/14/2011	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/15/2011	ND	154	76.9	200	3.51		
DRO >C10-C28	<10.0	10.0	06/15/2011	ND	152	75.8	200	3.11		
Surrogate: 1-Chlorooctane	75.9 %	70-130								
Surrogate: 1-Chlorooctadecane	103 %	70-130								

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
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 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/10/2011	Sampling Date:	06/10/2011
Reported:	06/17/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT N-28-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 6 @ 25' (H101212-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3240	16.0	06/14/2011	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/15/2011	ND	154	76.9	200	3.51		
DRO >C10-C28	<10.0	10.0	06/15/2011	ND	152	75.8	200	3.11		

Surrogate: 1-Chlorooctane 81.0 % 70-130
 Surrogate: 1-Chlorooctadecane 110 % 70-130

Sample ID: SB 6 @ 55' (H101212-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/14/2011	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/16/2011	ND	167	83.6	200	3.30		
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	150	75.0	200	2.31		

Surrogate: 1-Chlorooctane 85.5 % 70-130
 Surrogate: 1-Chlorooctadecane 116 % 70-130

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CARDINAL 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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Rice Operating Company		BILL TO				ANALYSIS REQUEST													
Project Manager: Hack Conder		P.O. #:				Chlorides TPH 8015 M BTEX Texas TPH Complete Cations/Anions TPH 8015 M Extended Thru C40													
Address: 122 West Taylor		Company:																	
City: Hobbs State: NM Zip: 88240		Attn:																	
Phone #: 575-393-9174 Fax #: 575-397-1471		Address:																	
Project #: Project Owner:		City:																	
Project Name: Vacuum Jct N-28-1		State: Zip:																	
Project Location: Vacuum Jct N-28-1		Phone #:																	
Sampler Name: Jordan Woodfin		Fax #:																	
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	CONTAINERS	MATRIX	PRESERV	SAMPLING													
			(GRAB OR C) (OMP)	GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:	ACID/BASE: ICE / COOL OTHER:	DATE	TIME												
1	SB 2 @ 15'		1	✓	✓	6/9/11	12:00	✓	✓										
2	SB 2 @ 65'		1	✓	✓	"	12:30	✓	✓										
3	SB 3 @ 15'		1	✓	✓	"	01:00	✓	✓										
4	SB 3 @ 55'		1	✓	✓	"	01:30	✓	✓										
5	SB 4 @ 25'		1	✓	✓	"	02:00	✓	✓										
6	SB 4 @ 65'		1	✓	✓	"	02:30	✓	✓										
7	SB 5 @ 5'		1	✓	✓	"	03:00	✓	✓										
8	SB 5 @ 65'		1	✓	✓	"	03:30	✓	✓										
9	SB 6 @ 25'		1	✓	✓	6/10/11	06:30	✓	✓										
10	SB 6 @ 55'		1	✓	✓	"	06:45	✓	✓										

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Relinquished By: Jordan Woodfin	Date: 6/10/11 Time: 9:20	Received By: [Signature]	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: [Signature]	

REMARKS: email results

Hconder@riceswd.com; jwoodfin@rice-ecs.com;
 Lweinheimer@rice-ecs.com kjones@riceswd.com

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

#26

NEED SAMPLES BACK, PLEASE



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

July 18, 2011

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

RE: VACUUM JCT N-28-1

Enclosed are the results of analyses for samples received by the laboratory on 07/14/11 10:30.

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 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, prominent initial "C".

Celey D. Keene
Lab Director/Quality Manager



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:	07/14/2011	Sampling Date:	07/13/2011
Reported:	07/18/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT N-28-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 7 @ 5' (H101453-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2200	16.0	07/15/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/17/2011	ND	197	98.6	200	0.112		
DRO >C10-C28	12.3	10.0	07/17/2011	ND	182	90.8	200	0.814		
Surrogate: 1-Chlorooctane	97.5 %	70-130								
Surrogate: 1-Chlorooctadecane	108 %	70-130								

Sample ID: SB 7 @ 65' (H101453-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	07/15/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/17/2011	ND	197	98.6	200	0.112		
DRO >C10-C28	<10.0	10.0	07/17/2011	ND	182	90.8	200	0.814		
Surrogate: 1-Chlorooctane	106 %	70-130								
Surrogate: 1-Chlorooctadecane	113 %	70-130								

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	07/14/2011	Sampling Date:	07/13/2011
Reported:	07/18/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT N-28-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 8 @ 25' (H101453-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1500	16.0	07/15/2011	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/17/2011	ND	197	98.6	200	0.112		
DRO >C10-C28	<10.0	10.0	07/17/2011	ND	182	90.8	200	0.814		

Surrogate: 1-Chlorooctane 105 % 70-130
 Surrogate: 1-Chlorooctadecane 114 % 70-130

Sample ID: SB 8 @ 65' (H101453-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	07/15/2011	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/17/2011	ND	197	98.6	200	0.112		
DRO >C10-C28	<10.0	10.0	07/17/2011	ND	182	90.8	200	0.814		

Surrogate: 1-Chlorooctane 108 % 70-130
 Surrogate: 1-Chlorooctadecane 118 % 70-130

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	07/14/2011	Sampling Date:	07/13/2011
Reported:	07/18/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT N-28-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 9 @ 30' (H101453-05)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2640	16.0	07/15/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/17/2011	ND	197	98.6	200	0.112		
DRO >C10-C28	<10.0	10.0	07/17/2011	ND	182	90.8	200	0.814		
Surrogate: 1-Chlorooctane		108 %	70-130							
Surrogate: 1-Chlorooctadecane		122 %	70-130							

Sample ID: SB 9 @ 65' (H101453-06)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1600	16.0	07/15/2011	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/17/2011	ND	197	98.6	200	0.112		
DRO >C10-C28	<10.0	10.0	07/17/2011	ND	182	90.8	200	0.814		
Surrogate: 1-Chlorooctane		108 %	70-130							
Surrogate: 1-Chlorooctadecane		118 %	70-130							

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

Hansen, Edward J., EMNRD

From: Laura Pena <lpena@riceswd.com>
Sent: Wednesday, May 09, 2012 11:41 AM
To: Hansen, Edward J., EMNRD
Cc: Hack Conder; Katie Jones; L Peter Galusky Jr
Subject: Vacuum N-28 vent, jct. N-28-1, and N-28-2 vent Plats
Attachments: Vacuum N-28 vent and N-28-1 ALL SB data and Proposed Liner 5-9-12.jpg; Vacuum N-28 vent, N-28-2 vent and N-28-1 OUTSIDE SB DATA 5-9-12.jpg

Mr. Hansen,

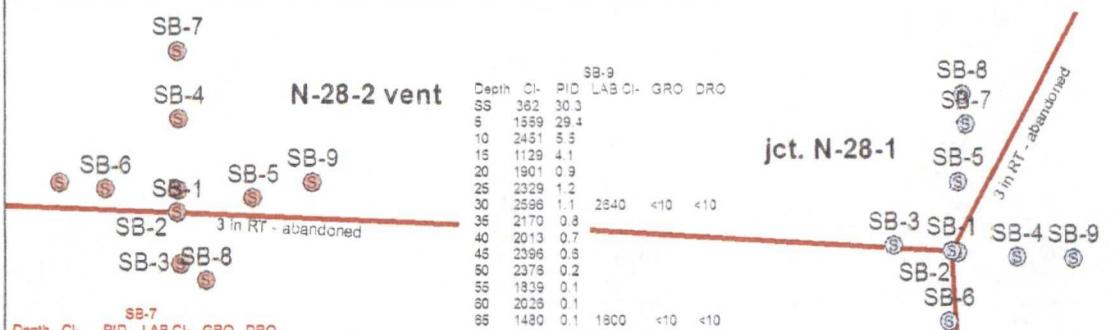
Attach are the plats for Vacuum N-28 vent (1R425-85), Jct. N-28-1 (1R425-87), and N-28-2 vent (1R425-86) as discussed during the May 1, 2012 meeting between NMOCD and Rice Operating Company.

- One plat depicts the relationship of N-28 vent and jct. N-28-1 to each other with soil data and the proposed liner.
- The other plat depicts all 3 sites and the relationships between them with all outside soil data.

If you have any questions or require more information, please do not hesitate to contact Hack Conder at (575) 631-6432.

Thank you,
Laura Peña

SB-6										SB-3					SB-8							
Depth	CI-	PID	LAB CI-	GRO	DRO	B	T	E	X	Depth	CI-	PID	LAB CI-	GRO	DRO	Depth	CI-	PID	LAB CI-	GRO	DRO	
SS	258	0.1								SS	1023	0					SS	224	0			
5	303	312	272	<50	368	<0.05	<0.05	<0.05	<0.15	5	1835	4.7					5	392	0.2			
10	3410	29.8								10	1884	3.6					10	1315	0.8			
15	5055	44.8								15	3290	2.9	3200	<10	<10	15	2435	0.4				
20	2332	6.1								20	3029	2.8					20	1119	0.8			
25	6010	6.1								25	2442	2.8					25	3049	0.2	3240	<10	<10
30	4372	9.6								30	2417	3.2					30	2420	0.2			
35	4171	11.2								35	1140	0.1					35	1620	0.2			
40	4331	7.2								40	1781	0.2					40	983	0.2			
45	8172	5.1	8240	<10	<10					45	184	0.2					45	421	0.2			
50	3009	4.2								50	182	0.1					50	258	0.2			
55	2033	3.6								55	178	0	84	<10	<10	55	144	0.2	32	<10	<10	
60	2108	2.5																				
65	1988	2.6	2050	<10	<10																	



SB-8					
Depth	CI-	PID	LAB CI-	GRO	DRO
SS	138	0.7			
5	370	117.4			
10	649	156.4			
15	1110	83.9			
20	1270	67.9			
25	2468	193.8	2920	214	1510
30	960	154.3			
35	2042	179.4			
40	2553	172.4	2960	134	840
45	1838	179.3			
50	2103	148.9			
55	2511	178.7			
60	2509	175.7			
65	2003	104.1	2400	23.3	283

SB-9					
Depth	CI-	PID	LAB CI-	GRO	DRO
SS	2548	1.5			
5	1184	24.6			
10	5824	5.5	4980	<10	<10
15	3437	2.8			
20	2183	2.6			
25	4371	3.4			
30	3487	3.5			
35	3825	3.2			
40	3057	5.3			
45	4059	4			
50	1553	5.7			
55	484	5.9			
60	291	5.8			
65	288	4.2	240	<10	<10

SB-7					
Depth	CI-	PID	LAB CI-	GRO	DRO
SS	13368	2.5	15400	<10	28.2
5	2832	4.9			
10	4980	3.9	4560	<10	13
15	4927	4.5			
20	4423	4.8			
25	4244	4.6			
30	2952	3.1			
35	2951	5.9			
40	2951	3.7			
45	2847	5.4			
50	2489	4.2			
55	2809	3.1			
60	2999	2.2			
65	2423	3.3	2480	<10	<10

SB-3					
Depth	CI-	PID	LAB CI-	GRO	DRO
SS	119	0			
1	305	0.6			
2	293	0.4			
3	281	0.1			
4	328	0.1			
5	595	0			
6	655	0			
7	705	0			
8	1181	0	1170	<10	<10
9	398	0.1			
10	732	0			
11	400	0			
12	425	0	224	<10	<10

SB-9					
Depth	CI-	PID	LAB CI-	GRO	DRO
SS	362	30.3			
5	1559	29.4			
10	2451	5.5			
15	1129	4.1			
20	1901	0.9			
25	2329	1.2			
30	2596	1.1	2540	<10	<10
35	2170	0.8			
40	2013	0.7			
45	2396	0.8			
50	2378	0.2			
55	1839	0.1			
60	2026	0.1			
65	1480	0.1	1800	<10	<10

SB-4					
Depth	CI-	PID	LAB CI-	GRO	DRO
SS	173	0.3			
1	1084	0.3			
2	1083	0.4			
3	823	0.4			
4	586	0.1			
5	894	0.1			
6	983	0			
7	2973	0			
8	5039	0	3680	<10	<10
9	4312	0			
10	4858	0			
11	4846	0			
12	2803	0			
15	1001	0			
20	584	0			
25	1723	0			
30	1472	0			
35	1078	0			
40	705	0			
45	541	0			
50	257	0			
55	143	0.7	48	<10	<10

SB-5					
Depth	CI-	PID	LAB CI-	GRO	DRO
SS	690	1.2			
1	1303	0.4			
2	1520	0.7			
3	1844	0.3			
4	1835	0.1			
5	3102	0.4			
6	3684	0.2			
7	4909	1.4	3580	<10	<10
8	4544	0.6			
9	2516	0.4			
10	728	0.2			
11	710	0.1			
12	738	0.1			
15	445	0.1			
20	515	0			
25	795	0			
30	254	0			
35	178	0			
40	148	0	32	<10	<10

SB-6					
Depth	CI-	PID	LAB CI-	GRO	DRO
SS	170	0.1			
1	180	0.1			
2	189	3.2			
3	287	218	388	138	1740
4	286	74.4			
5	288	142			
6	582	102			
7	2018	95.1	2240	179	2430
8	1213	91.1			
9	294	87.1			
10	1401	88.7			
11	1739	71.9			
12	1128	88.9			
15	653	107			
20	4471	8.1			
25	681	0.1			
30	351	0			
35	255	0			
40	145	0	84	<10	<10

Legend

SOIL BORES

- VACUUM N-28 VENT
- VACUUM JCT. N-28-1
- VACUUM N-28-2 VENT

ROC PIPELINES

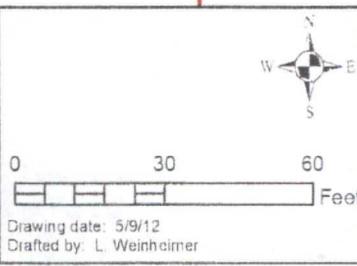


VACUUM N-28 VENT
NMOCD Case #: 1R425-85

VACUUM JCT. N-28-1
NMOCD Case #: 1R425-87

VACUUM N-28-2 VENT
NMOCD Case #: 1R425-86

LEGALS: UL/N&K sec. 28
T-17-S R-35-E



SB-1					SB-2					SB-3					SB-4				
Depth	CI-	PID	LAB CI-	GRO DRO	Depth	CI-	PID	LAB CI-	GRO DRO	Depth	CI-	PID	LAB CI-	GRO DRO	Depth	CI-	PID	LAB CI-	GRO DRO
SS	183	0.1			15	4900	11.9	4800	<10 <10	SS	1023	0			SS	345	0.1		
3	581	120.6			20	1573	2.4			5	1835	4.7			5	365	5.7		
4	888	53.7			25	3822	4.2			10	1864	3.8			10	803	7.7		
5	1908	12.5			30	3458	2.8			15	3290	2.9	3200	<10 <10	15	1368	6.1		
6	5498	3.7			35	3463	2.1			20	3029	2.8			20	1749	3.1		
7	5828	2.9			40	2622	4.7			25	2442	2.8			25	3726	2.7	4000	<10 <10
8	6249	8.1			45	1872	3.9			30	2417	3.2			30	3504	2.1		
9	6224	1.5			50	924	4.1			35	1140	0.1			35	3019	2		
10	8182	1.2			55	770	0.7			40	1761	0.2			40	2259	1.1		
11	7835	0.5			80	895	1.3			45	184	0.2			45	914	2.4		
12	6958	0.7	7400	<10 <10	85	852	1.2	928	<10 <10	50	182	0.1			50	897	4.2		
										55	178	0	64	<10 <10	55	535	0.9		
										80					80	521	1.3		
										85					85	452	1	432	<10 <10

SB-5				
Depth	CI-	PID	LAB CI-	GRO DRO
SS	3295	0.2		
5	4157	1.2	4580	<10 <10
10	1569	2.2		
15	1384	3.2		
20	1515	4.9		
25	2083	6.7		
30	1559	1.3		
35	1251	1.2		
40	1165	1.1		
45	857	1.1		
50	728	1		
55	608	0.9		
80	517	0.2		
85	528	0.1	480	<10 <10

SB-8				
Depth	CI-	PID	LAB CI-	GRO DRO
SS	224	0		
5	392	0.2		
10	1315	0.8		
15	2436	0.4		
20	1119	0.6		
25	3049	0.2	3240	<10 <10
30	2420	0.2		
35	1820	0.2		
40	983	0.2		
45	421	0.2		
50	256	0.2		
55	144	0.2	32	<10 <10

SB-7				
Depth	CI-	PID	LAB CI-	GRO DRO
SS	1298	0.4		
5	2473	0.3	2200	<10 12.3
10	1828	0.3		
15	1535	0.2		
20	1418	0.1		
25	1216	0		
30	909	0		
35	839	0		
40	824	0.7		
45	881	0.9		
50	533	1.4		
55	454	1.4		
80	400	0.4		
85	401	0.6	480	<10 <10

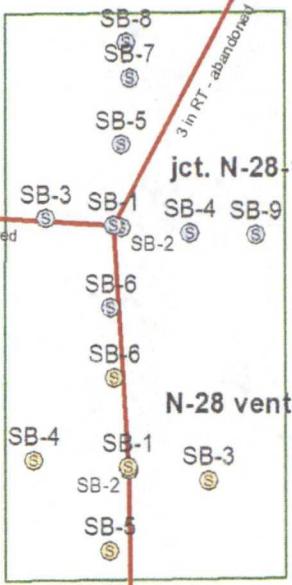
SB-8				
Depth	CI-	PID	LAB CI-	GRO DRO
SS	344	1.2		
5	615	1.1		
10	298	0.2		
15	688	0.3		
20	880	0.1		
25	1434	0.1	1500	<10 <10
30	572	0.1		
35	390	0		
40	303	0		
45	538	0		
50	421	0.1		
55	296	0.4		
80	281	0.4		
85	211	0.1	180	<10 <10

SB-9				
Depth	CI-	PID	LAB CI-	GRO DRO
SS	362	30.3		
5	1559	29.4		
10	2451	5.5		
15	1129	4.1		
20	1901	0.9		
25	2329	1.2		
30	2696	1.1	2640	<10 <10
35	2170	0.8		
40	2013	0.7		
45	2396	0.8		
50	2376	0.2		
55	1839	0.1		
60	2026	0.1		
85	1480	0.1	1800	<10 <10

SB-1				
Depth	CI-	PID	LAB CI-	GRO DRO
SS	149	0.4		
3	556	176		
4	1294	178		
5	2875	215		
6	4013	182		
7	8920	58		
8	7662	5.5		
9	8714	10.9		
10	2905	11.2		
11	2098	12.8		
12	2117	15	2580	<10 80.3

SB-2				
Depth	CI-	PID	LAB CI-	GRO DRO
15	555	12.9		
20	867	4.8	690	<10 <10
25	395	6.2		
30	300	2.9		
35	255	2.1		
40	170	2	32	<10 <10

SB-3				
Depth	CI-	PID	LAB CI-	GRO DRO
SS	119	0		
1	905	0.5		
2	253	0.4		
3	281	0.1		
4	336	0.1		
5	596	0		
6	695	0		
7	705	0		
8	1151	0	1170	<10 <10
9	398	0.1		
10	732	0		
11	400	0		
12	425	0	224	<10 <10



SB-4				
Depth	CI-	PID	LAB CI-	GRO DRO
SS	173	0.3		
1	1064	0.3		
2	1083	0.4		
3	823	0.4		
4	595	0.1		
5	894	0.1		
6	983	0		
7	2873	0		
8	5039	0	3680	<10 <10
9	4312	0		
10	4856	0		
11	4846	0		
12	2503	0		
15	1001	0		
20	554	0		
25	1723	0		
30	1472	0		
35	1075	0		
40	705	0		
45	541	0		
50	357	0		
55	143	0.7	48	<10 <10

SB-5				
Depth	CI-	PID	LAB CI-	GRO DRO
SS	990	1.2		
1	1303	0.4		
2	1520	0.7		
3	1544	0.3		
4	1655	0.1		
5	3102	0.4		
6	3664	0.2		
7	4909	1.4	3580	<10 <10
8	4544	0.6		
9	2516	0.4		
10	728	0.2		
11	710	0.1		
12	738	0.1		
15	448	0.1		
20	515	0		
25	795	0		
30	254	0		
35	178	0		
40	148	0	32	<10 <10

SB-8									
Depth	CI-	PID	LAB CI-	GRO	DRO	B	T	E	X
SS	170	0.1							
1	180	0.1							
2	169	3.2							
3	287	218	368	136	1740	<0.05	<0.05	2.41	1.82
4	266	74.4							
5	288	142							
6	582	102							
7	2016	85.1	2240	179	2430				
8	1213	91.1							
9	1294	67.1							
10	1491	88.7							
11	1739	71.9							
12	1128	68.9							
15	653	107							
20	1471	8.1							
25	881	0.1							
30	351	0							
35	255	0							
40	148	0	64	<10	<10				

Legend
SOIL BORES
 (S) VACUUM N-28 VENT
 (S) VACUUM JCT. N-28-1
 --- ROC PIPELINES
 [] PROPOSED 20-MI REINFORCED LINER @ 3'



VACUUM N-28 VENT
 NMOCD Case #: 1R425-85
VACUUM JCT. N-28-1
 NMOCD Case #: 1R425-87
 LEGALS: UL/N&K sec. 28
 T-17-S R-35-E

