1R - 428-60

WORKPLANS

Date:

6-8-10

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266.0745

RECEIVED OCD
2010 JUN 10 A 11: 27

June 8, 2010

Mr. Edward J. Hansen
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: **Hobbs SWD System Junction A-25 Site: T-18-S, R-37-E, Section 25, Unit A, Initial Characterization Report and Corrective Action Plan**
NMOCD Case #: 1R428-60

Mr. Hansen:

On behalf of Rice Operating Company (ROC), R.T. Hicks Consultants, Ltd. is submitting this Initial Characterization Report (ICR) and Corrective Action Plan (CAP) for the Hobbs Junction A-25 site regulatory file. The investigation conducted to date demonstrates that neither chloride nor hydrocarbons are present in the vadose zone in quantities that represent a threat to ground water quality.

Background
The Hobbs Junction A-25 site is located northwest of the city of Hobbs at T-18-S, R-37-E, Section 25, Unit A, east of the corner of a large former tank battery site. The junction box was removed on October 18, 2002 and soil samples recovered from the resulting 4-foot deep excavation indicated a maximum chloride concentration of 188 mg/kg and "light" TPH levels. The Investigation Characterization Plan (ICP), dated February 19, 2009 and approved by the NMOCD on April 22, 2009, is provided as Attachment A to this letter. The ICP includes background information and a site vicinity map for this and five other nearby ROC sites.

Field Program
Hicks Consultants supervised a deep soil sampling program to characterize possible hydrocarbon and chloride impact due to past activities. On September 23, 2009, soil boring No. 1 (SB-1) was drilled within the shallow excavation, approximately 1.5 feet west of the original junction box in order to evaluate the deep soil directly below the former ROC equipment. Figure 1 is a map that demonstrates the original junction box and SB-1 locations as determined using a Trimble model GEO-XH GPS that is accurate to within 0.5 ft.

Soil samples were collected and field screened by ROC for hydrocarbons and chloride concentrations. Figure 2 is a site map depicting the location of SB-1, the surrounding area, and all the soil sample field screening and laboratory verification results. The highest photo-ionic detector (PID) reading encountered in the soil boring was 166 ppm at 15 feet below the surface. The highest field titration chloride concentrations encountered in the soil boring was 239 mg/kg at 25 feet below the surface. Both PID readings and field chloride concentrations decreased to the 35-foot total depth of the soil boring.

Laboratory analyses were performed on the samples recovered at 15 and 35 feet below the surface to verify the field evaluations. These results indicate that regulated hydrocarbons and chlorides are not present in the soil at concentrations that represent a threat to fresh water, human health, or the environment. Attachment B provides a soil lithology log including the field hydrocarbon and chloride screening data. Attachment C provides the laboratory report and chain of custody for verification of the September 23, 2009 field data.

Recommendations

We recommend surface restoration at the site, with work including:

- Removal of large rocks and asphaltic soils associated with the former tank battery,
- Backfilling the site with clean topsoil,
- Seeding the area with native seed mixes.

Once these activities are completed and documented, a termination of the regulatory file will be requested.

Please contact Hack Conder of ROC at 575-393-9174 if you have any questions concerning this submission. Thank you for your time and consideration.

Sincerely,
R.T Hicks Consultants, Ltd.

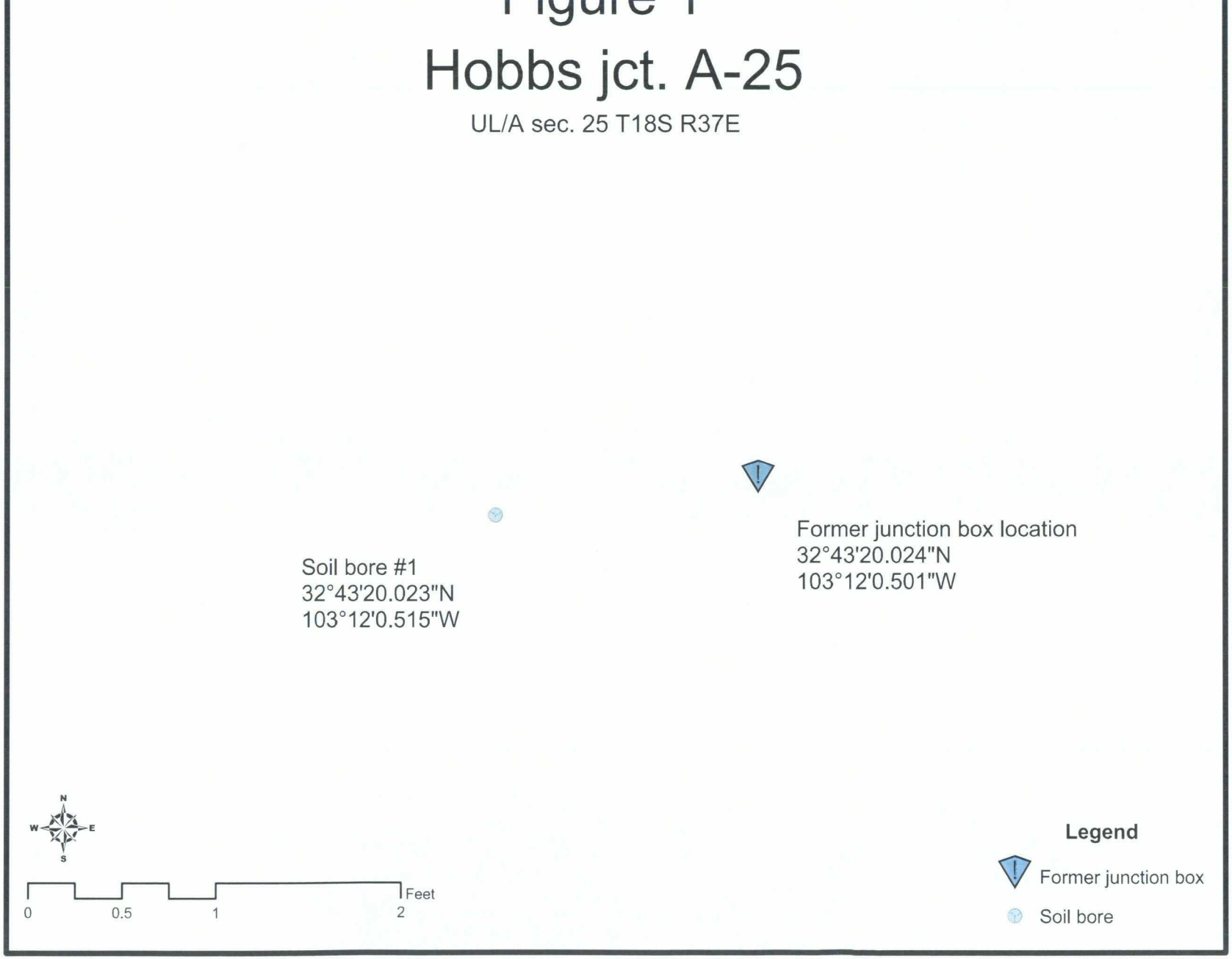
Dale T. Littlejohn

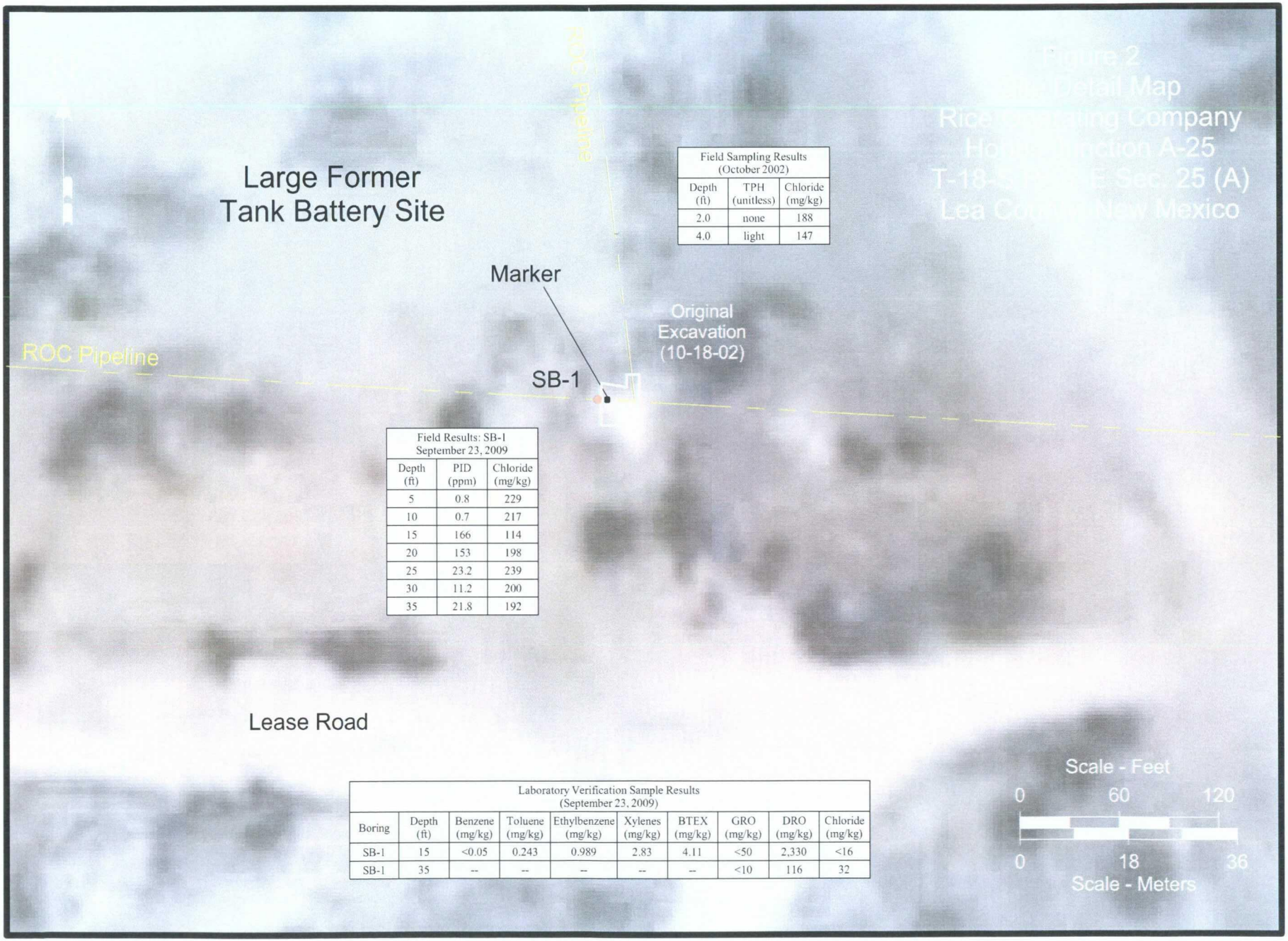
Dale T Littlejohn
Geologist

Copy: Hack Conder, ROC

Figure 1
Hobbs jct. A-25

UL/A sec. 25 T18S R37E





Field Sampling Results (October 2002)		
Depth (ft)	TPH (unitless)	Chloride (mg/kg)
2.0	none	188
4.0	light	147

Field Results: SB-1 September 23, 2009		
Depth (ft)	PID (ppm)	Chloride (mg/kg)
5	0.8	229
10	0.7	217
15	166	114
20	153	198
25	23.2	239
30	11.2	200
35	21.8	192

Laboratory Verification Sample Results (September 23, 2009)									
Boring	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	Chloride (mg/kg)
SB-1	15	<0.05	0.243	0.989	2.83	4.11	<50	2,330	<16
SB-1	35	--	--	--	--	--	<10	116	32

ATTACHMENT A

Investigation Characterization Plan
Submitted on February 19, 2009

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

February 19, 2009

Mr. Brad Jones
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Investigation & Characterization Plan
Hobbs Salt Water Disposal System:
Jct. A-6, F-24-3 Vent, F-25 EOL, G-9 Vent, Jct. A-25, Jct. F-24-1
T18S, R37E, Sections 24 & 25, and T19S, R38E Sections 6 & 9

Dear Mr. Jones:

On behalf of Rice Operating Company (ROC), R.T. Hicks Consultants, Ltd. is pleased to submit this Investigation & Characterization Plan (ICP) for the six (6) junction box and vent sites within the Hobbs Salt Water Disposal System referenced above. Plate 1 is a map showing the sites relative to major roads in the area. Plate 2 shows the sites, nearby USGS monitoring wells, and a regional potentiometric surface map.

The work elements proposed below will allow us to characterize these sites and develop an appropriate corrective action plan.

1. ROC will identify and document the location of all current and historic equipment and pipelines associated with each site.
2. ROC will use a backhoe with a 12-foot vertical reach to install a series of sampling trenches in order to recover soil samples and delineate the lateral extent (and potentially the vertical extent) of impacted soil.
3. If characterization by the backhoe is insufficient to define the extent and magnitude of past releases, ROC and Hicks Consultants will use a drilling rig to install one soil boring at the center of the source area to delineate the vertical extent of chloride in the soil.
4. Soil samples obtained by the backhoe or drilling rig will be obtained from regular intervals below ground surface.
5. Representative soil samples will be sent to a laboratory to allow for verification of the field chloride and PID results.
6. General soil texture descriptions will be provided for each sample trench or boring.
7. The criteria to delineate the extent of impact during trenching as well as in a soil boring is 5 point chloride decline vs. depth, or:
   a. After three consecutive samples demonstrate <250 ppm chloride using field analyses and <100 ppm total hydrocarbon vapors using the headspace method (see attached ROC Quality Procedure in Appendix A), or
   b. After five consecutive samples show a decreasing trend of chloride and hydrocarbons and the last sample shows chloride < 250 ppm and total hydrocarbon vapors <100 ppm (Appendix A).
   c. Soil boring to capillary fringe should neither (a) or (b) apply

8. If the boring penetrates the capillary fringe, a monitoring well will be completed with a 2 or 4" diameter casing 25 feet down gradient from confirmed impact for use during possible corrective actions. Plate 2 presents a potentiometric surface map for the site area.
9. If field analysis of hydrocarbon vapors and observations of staining show that hydrocarbon impact is unlikely at the site or below 20-feet, collection of samples from cuttings may be substituted for split spoon sampling (chloride only).

The ROC trench characterization will be employed to identify the lateral extent of chloride at each site, if possible. If trenching does not fully characterize the lateral extent of chloride at each site, boreholes will be advanced 20 feet beyond the furthest trenches where the soil data has an average chloride concentration greater than 1,000 mg/kg. The total depth of borings installed to characterize lateral extent shall be 20 feet below ground surface with soil samples for delineation taken at 5 foot intervals.

Rice Operating Company (ROC) is the service provider (agent) for the Hobbs Saltwater Disposal System and has no ownership of any portion of pipeline, well, or facility. A consortium of oil producers who own the Hobbs System (System Partners) provide all operating capital on a percentage ownership/usage basis. Major projects require System Partner authorization for expenditures (AFE) approval and work begins as funds are received. We will implement the work outlined herein after NMOCD approval and subsequent authorization from the System Partners. The Hobbs SWD system is in abandonment.

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

1. Protects public health.
2. Provides the greatest net environmental benefit.
3. Complies with NMOCD Rules.
4. Is supported by good science.

Following the site characterization described above, a Corrective Action Plan with the data and analysis supportive of a procedure for site file termination, or a termination request will be submitted, depending on characterization findings. Quality Procedures for characterization work are provided in Appendix A.

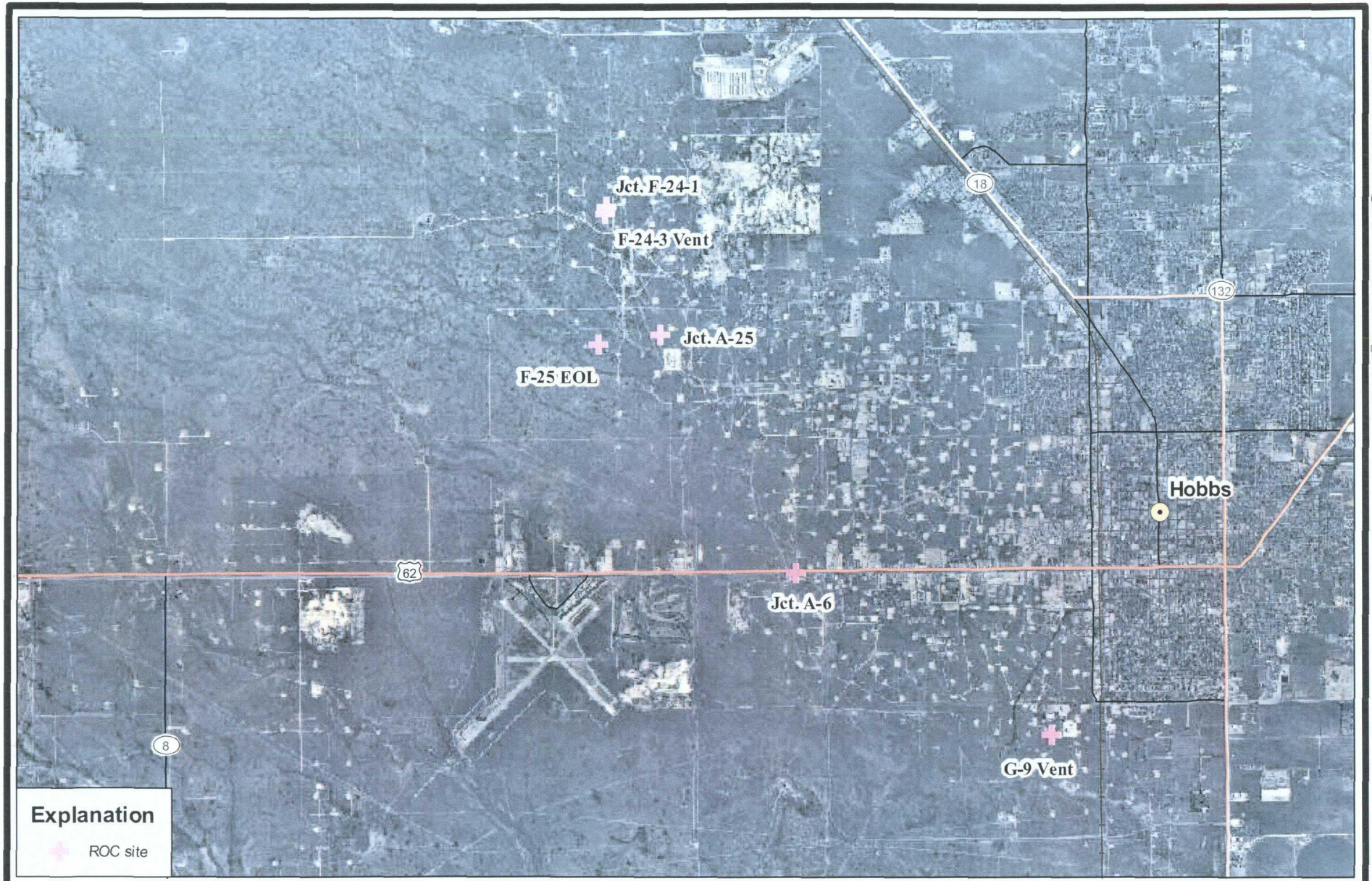
If you have any questions or comments regarding this ICP, please contact me at our Albuquerque office or Hack Conder of Rice Operating Company.

Sincerely,
R.T. Hicks Consultants, Ltd.

Katie Lee

Katie Lee
Project Scientist

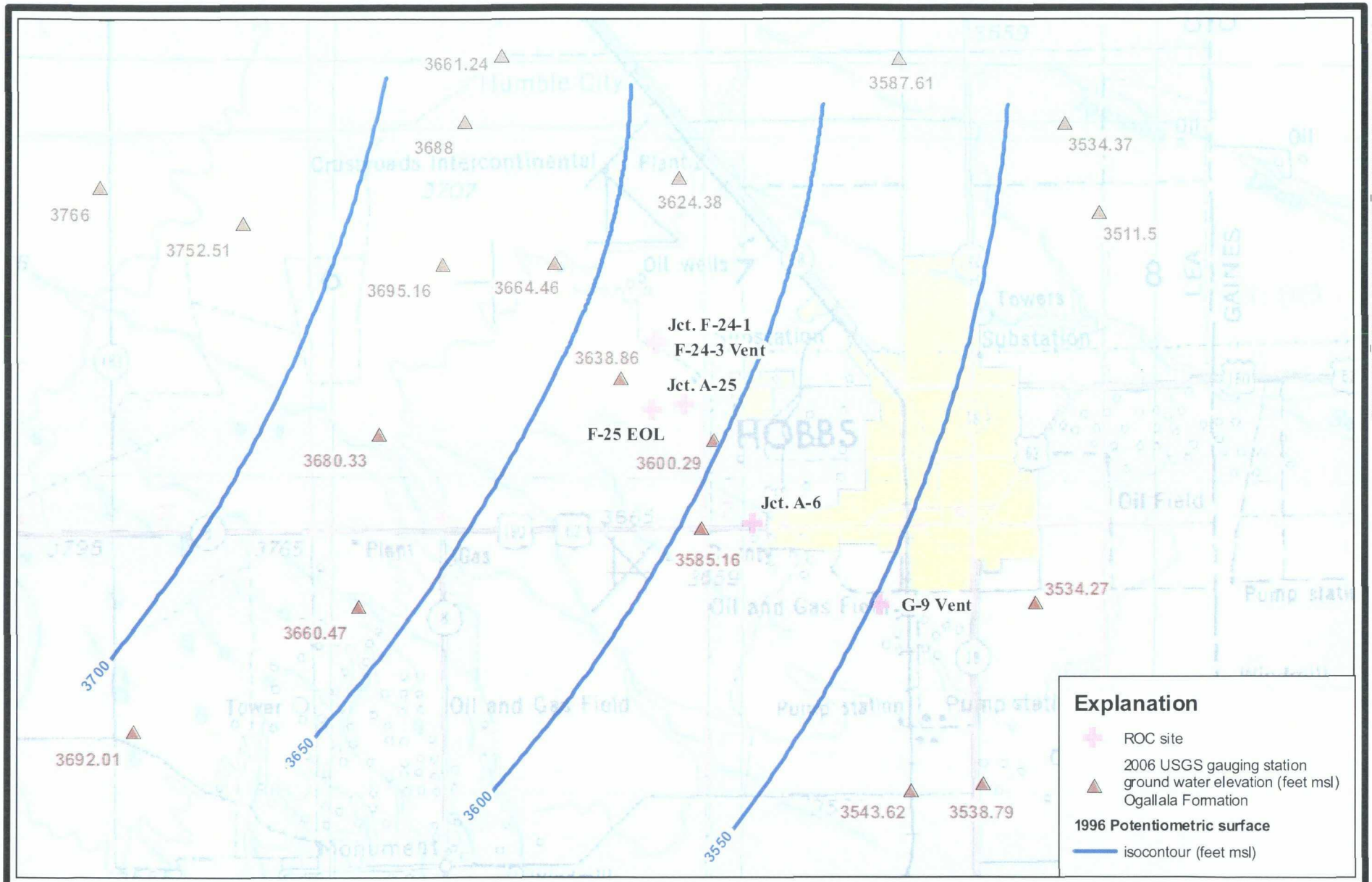
Copy: Rice Operating Company
Edward J. Hansen, NMOCD



S:/PROJECTS/ROC/SIXSITES_2009/PLATES/GWELEV_USGS.MXD

1/28/2009

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Site Map - 2005 Aerial Photo (RGIS) Jct. A-6, Jct. A-25, Jct. F-24-1, Jct. F-24-3 Vent, G-9 Vent
	Rice Operating Company 2009 Hobbs Investigation and Characterization Plan
	Plate 1
	January 2009



R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

2006 Potentiometric Surface Map
Jct. A-6, Jct. A-25, Jct. F-24-1, Jct. F-24-3 Vent, G-9 Vent

Plate 2

Rice Operating Company
2009 Hobbs Investigation and Characterization Plan

January 2009

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1/28/2009

ATTACHMENT B

Lithology Log from Soil Boring (Vertical Delineation)
Conducted by ROC and RTH in September 2009

Logger:	Dale Littlejohn
Driller:	Harrison & Cooper, Inc. Drilling
Consultant:	R.T. Hicks, Consultants
Drilling Method:	Air rotary
Start Date:	9/23/2009
End Date:	9/23/2009

Comments: split spoon sampling at 10 ft. All other were from air rotary cuttings (soil was rocky)

DRAFTED BY: Lara Weinheimer, ROC

TD = 35 ft GW = 48 ft

RICE OPERATING COMPANY ROC SINCE 1955

Project Name: Hobbs jct. A-25 **Well ID:** SB #1

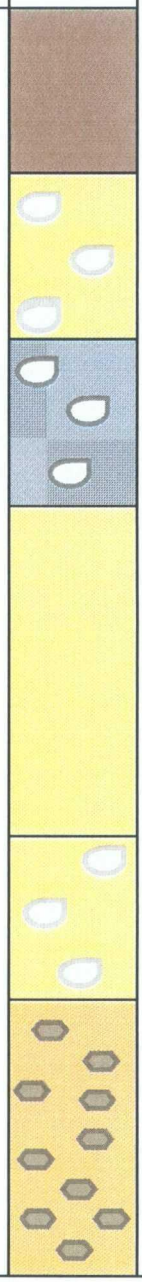
Location: UL/A sec. 25 T18S R37E

Lat: N32°43'20.023" **County:** Lea

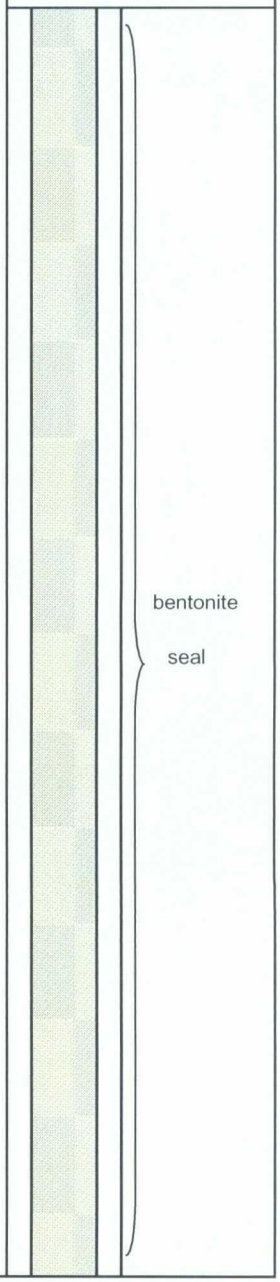
Long: W103°12'0.515" **State:** NM

Depth (feet)	chloride field tests	LAB	PID	Description
				0 - 5 ft
				SILT
5	229		0.8	dark brown, possible fill
				5 - 10 ft
				SILT WITH CALICHE
10	217		0.7	grayish-brown, hydrocarbon odor
				10 - 15 ft
				SILT, VERY FINE SAND, CALICHE
15	114		166	gray, strong hydrocarbon odor
				15 - 25 ft
				SILT AND VERY FINE SAND
20	198		153	grayish-brown, mod. hydrocarbon odor
25	239		23.2	
				25 - 30 ft
				SILT AND SILTY SAND WITH CALICHE
30	200		11.2	grayish-brown, mod. hydrocarbon odor
				30 - 35 ft
				VERY FINE SAND, SMALL GRAVEL
35	192		21.8	brown, poorly sorted, angular
				slight hydrocarbon odor

Lithology



Well Construction



ATTACHMENT C

Laboratory Reports and Chain-of-Custody Documentation

CARDINAL LABORATORIES

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

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

Receiving Date: 09/23/09
Reporting Date: 09/25/09
Project Owner: NOT GIVEN
Project Name: HOBBS JCT. A-25
Project Location: HOBBS JCT. A-25

Sampling Date: 09/23/09
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: AB/HM

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE		09/25/09	09/25/09	09/24/09
H18304-1	SB #1 @ 15'	<50.0	2,330	<16
H18304-2	SB #1 @ 35'	<10.0	116	32
Quality Control		438	443	490
True Value QC		500	500	500
% Recovery		87.6	88.6	98.0
Relative Percent Difference		0.6	1.6	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-Cl B
*Analyses performed on 1:4 w:v aqueous extracts. Reported on wet weight.
Not accredited for GRO/DRO and Chloride.

Chemist

09/25/09
Date

H18304 TCL RICE

CARDINAL LABORATORIES

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

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

Receiving Date: 09/23/09
Reporting Date: 09/24/09
Project Owner: NOT GIVEN
Project Name: HOBBS JCT A-25
Project Location: HOBBS JCT A-25

Sampling Date: 09/23/09
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

LAB NO.	SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE:		09/24/09	09/24/09	09/24/09	09/24/09
H18304-1	SB#1 @ 15'	<0.050	0.243	0.989	2.83
Quality Control		0.050	0.048	0.048	0.148
True Value QC		0.050	0.050	0.050	0.150
% Recovery		100	96.0	96.0	98.7
Relative Percent Difference		3.8	3.9	3.9	2.7

METHODS: BTEX - SW-846 8021B

TEXAS NELAP ACCREDITATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE, AND TOTAL XYLENES. Reported on wet weight.

Lab Director

09/25/09
Date

H18304 B RICE

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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 Company	**BILL TO**	
Project Manager:	Hack Conder	P.O. #:	
Address:	122 West Taylor	Company:	
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	393-9174 Fax #: 397-1471	Address:	
Project #:	Project Owner:	City:	
Project Name:	Hobbs jct. A-25	State: Zip:	
Project Location:	Hobbs jct. A-25	Phone #:	
Sampler Name:	Lara Weinheimer	Fax #:	

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	TPH 8015 M	BTEX	Texas TPH
H15304-1	SB #1 @ 15'		1			✓					✓		9/23/09	02:18	✓	✓	✓	
-2	SB #1 @ 35'		1			✓					✓		9/23/09	02:34	✓	✓		

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: L. Weinheimer	Date: 9-23-09	Received By:	Phone Result: ☐ Yes ☑ No	Add'l Phone #:	
	Time: 5:00		Fax Result: ☐ Yes ☑ No	Add'l Fax #:	
Relinquished By:	Date:	Received By:	REMARKS: Lara called 9/24/09 - Requested Rush. 9/24/09 16 email results		
	Time:				
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No	CHECKED BY: (Initials) LCB	Hconder@riceswd.com; jpurvis@riceswd.com; Lweinheimer@riceswd.com	

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

NEED SAMPLES BACK, PLEASE