

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

Release Notification and Corrective Action

OPERATOR

Initial Report  Final Report

Name of Company	Rice Operating	Contact	Tony Grieco
Address	122 W. Taylor St., Hobbs, NM 88240	Telephone No.	(575) 393-9174
Facility Name	Pipeline (Justis P-2 Leak)	Facility Type	Salt Water Gathering System
Surface Owner:	George Willis	Mineral Owner:	State
		API No.	30-025-24761

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I, P	2	25S	37E					Lea

Latitude N 32°09'21.55931" Longitude W 103°07'39.52001" (NAD 83)

WTR 50' 20'

NATURE OF RELEASE

\* OCD CALL APPROX 100 BBL

Type of Release	Produced Water	Volume of Release	17 bbl	Volume Recovered	15 bbl
Source of Release	Pipeline	Date and Hour of Occurrence	Unknown	Date and Hour of Discovery	11/10/09 9:00 am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Larry Johnson, OCD, Hobbs		
By Whom?	Cindy Crain, Agent for Rice Operating	Date and Hour	11/11/09 12:30 pm		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

Pipeline was broken during hand-spotting operations. The broken segment of line has been replaced as a permanent repair.

Describe Area Affected and Cleanup Action Taken.\*

6,736 sq ft were affected, consisting of unvegetated areas related to an old, removed junction box and removed tank battery. After the leak was discovered, a crew was sent to repair the line, and a water truck was dispatched to remove and properly dispose of fluids. A one-call has been made and impacted surface soil will be excavated on November 16, 2009. Soil samples will be collected for laboratory analysis of chlorides, and a final C141 report will be submitted to the OCD following remediation of the spill area.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<b>OIL CONSERVATION DIVISION</b> 	
Printed Name: Tony Grieco	Approved by District Supervisor <b>ENVIRONMENTAL ENGINEER</b>	
Title: Environmental Tech	Approval Date: 5.6.10	Expiration Date: 7.6.10
E-mail Address: tgrieco@riceswd.com	Conditions of Approval:	
Date: 11/12/09 Phone: (575) 393-9174	Submit Final C-141 w/ Docs B4 <input checked="" type="checkbox"/> Attached <input type="checkbox"/> IRP# 10.5.2508	

\* Attach Additional Sheets If Necessary

Figure 2

INC. n LWT 1015523216

AAO- PLWJ 1015533791





April 28, 2010

**Mr. Larry Johnson**  
New Mexico Energy, Minerals, & Natural Resources  
Oil Conservation Division, Environmental Bureau  
1625 N. French Drive  
Hobbs, New Mexico 88240

**RECEIVED**

**APR 29 2010**  
**HOBBSOCD**

**RE: Rice Operating Company**  
**Justis P-2 Leak**  
**INVESTIGATION REPORT AND REMEDIATION WORK PLAN**  
**Unit Letters I & P, Sec. 2, T25S, R37E**  
**Lea County, New Mexico**

Mr. Johnson,

RICE Operating Company (ROC) has retained Crain Environmental to address potential environmental concerns at the above-referenced site in the Justis SWD system. ROC is the service provider (operator) for the Justis 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.

**Background and Previous Work**

The site is located approximately 5 miles northeast of Jal, New Mexico in Unit Letters I & P, Sec. 2, T25S, R37E as shown on the Site Location Map (Figure 1). NM OSE records indicated that groundwater would likely be encountered at a depth of approximately 83 feet.

On November 10, 2009, ROC discovered an accidental discharge of approximately seventeen barrels of produced water released from a point within 30 ft of the eliminated Justis P-2 vent junction box. Fifteen barrels of fluid were recovered and properly disposed. The line was permanently repaired on November 10, 2009. ROC submitted an initial C-141 on November 13, 2009 (Figure 2).

Initial soil sampling conducted on November 10, 2009 indicated approximately 6,736 square feet of surface was affected in Unit Letters I and P based on chloride field tests and visual observation. On November 16, 2009, a backhoe was used to collect samples at three sampling points confirming elevated chloride concentrations in Vertical 1 and Vertical 2 to a depth of 7 ft below ground surface (BGS). Additionally, approximately 12 cubic yards of damp soil was scraped from the area surrounding the Vertical 1 location and hauled to an NMOCD approved disposal facility. Imported soil was brought on site to replace scraped soil. A site map showing the field sampling results and the scraped area is shown in Figure 3. Appendix A provides laboratory data and chain of custody documentation.

ROC submitted an Investigation & Characterization Plan (ICP) to the NMOCD on March 10, 2010, proposing additional investigative work of the site to determine if there is potential for groundwater degradation from residual chlorides and/or hydrocarbons.

### **Recent Investigation**

In order to assess the horizontal and vertical limits of the spill, ROC installed seven (7) soil borings (SB-2 through SB-8) and one (1) monitoring well (MW-1) at the site on March 15, 16 and 17, 2010. The borings and monitoring well were installed using an air rotary drilling rig operated by Harrison & Cooper, Inc., of Lubbock, Texas.

Soil samples from the exploratory borings and the monitoring well installation were collected in five foot intervals from the ground surface to a depth of approximately 80 feet below ground surface (bgs) in borings SB-2 and SB-6, a depth of 75 feet bgs in boring SB-3, a depth of 20 feet bgs in borings SB-4, SB-5 and SB-7, and a depth of approximately 55 feet bgs in boring SB-8. Soil samples were collected from the monitoring well installation (MW-1) from the ground surface to a depth of 70 feet bgs. Samples from each boring (to a depth of 20' bgs) were collected using a split spoon sampling device. Samples from each boring, at depths greater than 20' bgs, were collected via cuttings from drilling. All soil borings were plugged with bentonite. Figure 4 shows the locations of the soil borings and the monitoring well. Appendix B provides soil boring and monitoring well logs. Appendix C provides photographs on soil boring and monitoring well installations.

The soil samples from borings SB-2 through SB-8 and monitoring well (MW-1) were labeled and sealed in plastic bags for headspace analysis. The headspace samples were allowed to reach ambient temperature before a RAE Instruments, Model 2000 photoionization detector (PID) was used to measure the concentration of organic vapors in the headspace of the sample container. The PID probe was inserted into the plastic bag, and the concentration of organic vapors was displayed by the instrument in parts per million (ppm). A portion of each sample was reserved for field chloride testing and possible laboratory submission. The Field Chloride Analyses and PID readings are shown on Table 1, as well as the Soil Boring Logs included in Appendix B.

Two (2) samples from each soil boring (SB-2 through SB-8) and from the monitoring well (MW-1) installation were placed in clean glass sample jars, labeled, and delivered under chain-of-custody control to Cardinal Laboratories (Cardinal), located in Hobbs, New Mexico, where they were analyzed for total petroleum hydrocarbons (TPH) by EPA Method SW-846 8015 M, extended for Gasoline Range Organics (GRO) and Diesel Range Organics (DRO), and chlorides by EPA method 4500 Cl<sup>-</sup>B. As all PID readings were less than 100 ppm, samples were not analyzed for benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX). The samples submitted to Cardinal were chosen based on the highest field chloride result and the deepest sample collected from each boring. Table 1 presents a summary of the laboratory analysis of soil samples. Laboratory analysis and chain of custody documentation are included in Appendix A.

Referring to Table 1, all TPH concentrations were reported less than the test method detection limit. Chloride concentrations were reported above 250 mg/kg in the uppermost sample

from each boring, but were reported less than 250 mg/kg in the deepest sample collected from borings SB-3 (176 mg/kg at 75' bgs), SB-4 (112 mg/kg at 20' bgs), SB-5 (32 mg/kg at 20' bgs), SB-7 (32 mg/kg at 20' bgs), SB-8 (64 mg/kg at 55' bgs), and MW-1 (48 mg/kg at 70' bgs). The chloride concentrations in the deepest samples (80 feet bgs) collected from soil borings SB-2 and SB-6 (672 mg/kg and 512 mg/kg, respectively) were above 250 mg/kg, but were greatly decreased from the chloride concentration reported in shallower sample from those borings (3,520 mg/kg and 1,650 mg/kg, respectively).

The monitoring well MW-1 was drilled to a depth of approximately 87 feet bgs and constructed with 2-inch diameter schedule 20 PVC casing and screen. Twenty feet of well screen was placed in the well, with approximately 15 feet of screen extending into groundwater, and 5 feet extending above groundwater. Silica sand was placed around the well screen to about 2 feet above the screen. A layer of bentonite pellets, approximately 3 feet thick, was placed over the sand, and hydrated with potable water.

On April 10, 2010, depth to groundwater was measured at 77.46 feet bgs. The well was developed until fine-grained sediments disturbed during drilling were removed, and the water was clear. Approximately 30 gallons of water were removed from the well.

On April 11, 2010 a groundwater sample was collected from monitoring well MW-1 for laboratory analysis. The sample was carefully poured into laboratory prepared containers, labeled, chilled in an ice chest and delivered to Cardinal, where it was analyzed for chloride, SO<sub>4</sub>, and total dissolved solids (TDS). The laboratory reported a chloride concentration of 760 milligrams per liter (mg/L), an SO<sub>4</sub> concentration of 90.7 mg/L, and a TDS concentration of 1,740 mg/L in the groundwater sample. Appendix A provides the laboratory documentation.

### Conclusions

It was reported in the initial C141, that approximately 17 barrels (bbl) of produced water was released at the site. ROC personnel were onsite when the leak occurred and immediately called a vacuum truck to recover as much fluid as possible. It was reported that 15 bbl were removed from the site. The horizontal limits of the spill were also immediately mapped by ROC personnel.

Initial and subsequent investigations have led to the conclusion that the majority of the chloride impact at the site possibly originated from the Justis P-2 vent, located immediately west of the Justis P-2 leak origination point. One groundwater monitoring well (MW-1) has been installed at the site in order to observe the chloride concentration in groundwater at the site. Sample results report a concentration of 760 mg/L.

ROC does not believe that the groundwater impact is a result of the Justis P-2 leak, and it is unknown at this time if the impact is from the Justis P-2 vent. An Investigation and Characterization Plan (ICP) was submitted to Mr. Edward Hansen (NMOCD – Santa Fe) on March 8, 2010. The **Recent Investigation**, detailed in this report, also serves as the **Recent Investigation** for the Justis P-2 vent site. As there was a chloride impact to groundwater, further

Mr. Larry Johnson  
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April 28, 2010

groundwater investigation and soil remediation in the vicinity of soil borings SB-2, SB-5 and SB-6 will be conducted under the Justis P-2 vent ICP.

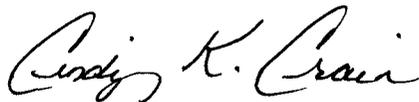
**Proposal**

Rice Operating Company proposes to excavate an approximately 25' x 25' area of soil in the vicinity of soil boring SB-3 to a depth of approximately five (5) feet below ground surface (bgs). Soil will be scraped from all other areas of the spill (north and south of the SB-3 location) to a depth of approximately six (6) inches to one (1) foot bgs. The spill area located west of boring SB-3 will be addressed in the remediation for the Justis P-2 Vent. All scraped soil will be hauled to an NMOCD approved disposal facility.

A 20 mil plastic liner will be installed at a depth of five (5) feet bgs in the excavation surrounding boring SB-3, and the excavation will be backfilled with blended soil to a depth of one (1) foot bgs. In order to promote successful revegetation of the site, additional clean soil will be blended with organic materials (ex.- hay or cotton gin) and used to backfill the upper one (1) foot of the SB-3 excavation and all other excavated areas. All backfilled areas will be graded to surface and re-seeded to achieve native conditions. ROC will submit a final report to the NMOCD following completion of the proposed remediation activities, and will submit a final C141 for closure at that time.

I appreciate the opportunity to work with you on this project. Please call me at (432) 530-9797 or Hack Conder at (575) 393-9174 if you have any questions or wish to discuss the proposal in more detail.

Sincerely,  
*Crain Environmental*



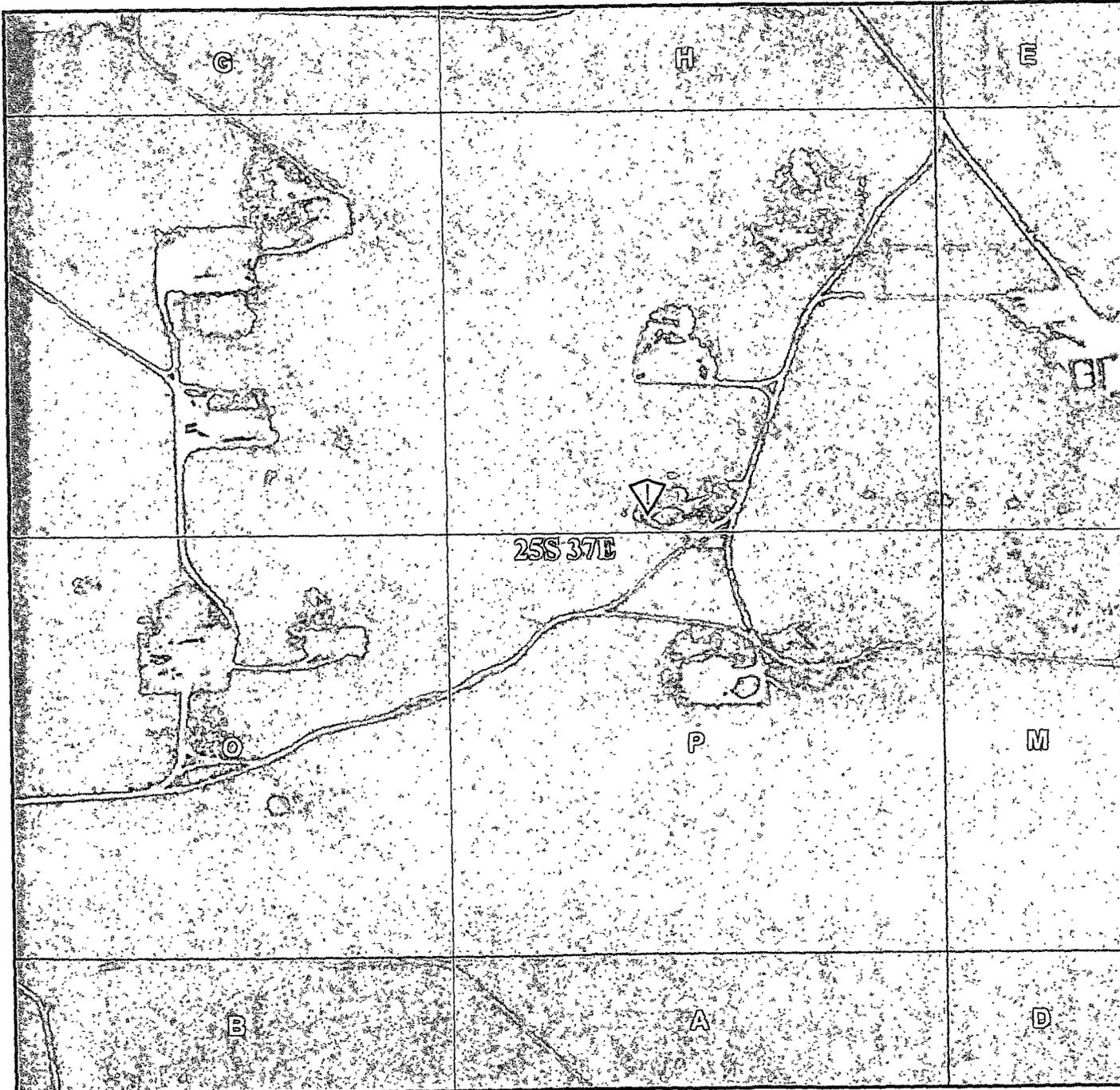
Cindy K. Crain, P.G.  
Environmental Manager

cc: Hack Conder, ROC

Attachments: site location map, initial C-141, site maps (2), table 1, laboratory documentation, soil boring and MW logs, photographs

## **FIGURES**

# Location of site



122 W. Taylor  
Hobbs, NM 88240  
Phone (575) 393-9174  
Fax (575) 397-1471

## Justis P-2 leak

Legals: UL: I and P  
sec. 2 T25S R37E

Owner: State

Drawing date:  
Revision date:  
Drafted by:

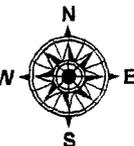


FIGURE 1



122 W. Taylor  
 Hobbs, NM 88240  
 Phone (575) 393-9174  
 Fax (575) 397-1471

# JUSTIS P-2 LEAK

Legals: U/L I&P SEC 2 T25S R37E  
 Owner: STATE

VERTICAL #1	DEPTH	CI (PPM)
1 FT		3701
1 FT (LAB)		3520
2 FT		3089
2 FT (LAB)		4200
3 FT		1709
4 FT		542
5 FT		515
6 FT		423
7 FT		1285
7 FT (LAB)		2000

AUGER 4	DEPTH	CI (PPM)
SURF		4706
1 FT		5584

VERTICAL #2	DEPTH	CI (PPM)
1 FT		1173
1 FT (LAB)		1360
2 FT		1328
2 FT (LAB)		1780
3 FT		486
4 FT		990
5 FT		1070
6 FT		1080
7 FT		1023
7 FT (LAB)		1470

AUGER 1	DEPTH	CI (PPM)
SURF		6694
1 FT		1649

VERTICAL #3	DEPTH	CI (PPM)
1 FT		356
1 FT (LAB)		336
2 FT		361
3 FT		415
4 FT		713
4 FT (LAB)		832
5 FT		471
6 FT		480
7 FT		423
7 FT (LAB)		544

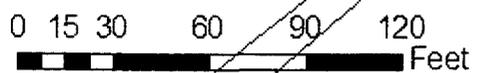
AUGER 3	DEPTH	CI (PPM)
SURF		3821
1 FT		724

AUGER 2	DEPTH	CI (PPM)
SURF		5360
1 FT		849

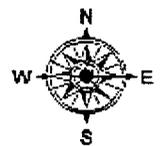
AUGER 5	DEPTH	CI (PPM)
SURF		91
1 FT		89

**Legend**

- Justis Soil Bores
- Monitor Wells
- CLAY MARKER
- CLAY LINER
- SCRAPE AREA
- HEAVY ASPHALTINE
- LEAK AREA
- OLD TANK BASE
- OLD TREATER BASE

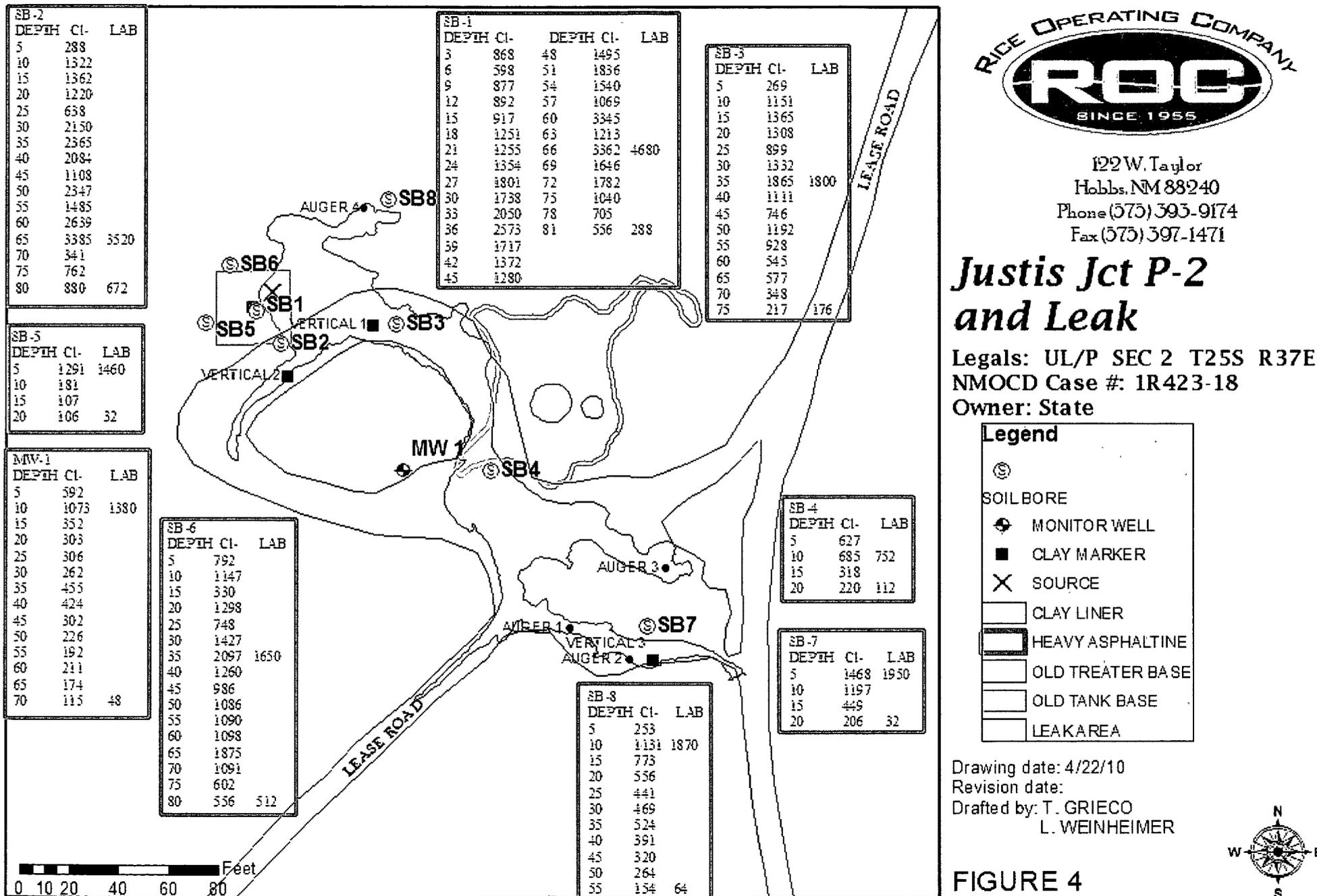


Drawing date: 11/10/09  
 Revision date: 3/25/10  
 Drafted by: TONY GRIECO  
 LARA WEINHEIMER



**Figure 3**

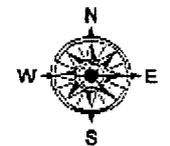
# Location of soil bores and monitor wells



122 W. Taylor  
 Hobbs, NM 88240  
 Phone (575) 393-9174  
 Fax (575) 397-1471

## Justis Jct P-2 and Leak

Legals: UL/P SEC 2 T25S R37E  
 NMOCD Case #: 1R423-18  
 Owner: State



## **TABLE**

**Table 1:**  
**Summary of Laboratory Analysis of Soil Samples**  
**Rice Operating Company, Justis P-2 Leak**  
**Unit Letters I & P, Section 2, Township 25 South, Range 37 East**  
**Lea County, New Mexico**

Sample Date	Soil Boring Number	Sample Depth (feet BGS)	PID (ppm)	TPH (GRO) C6 - C10 mg/kg	TPH (DRO) >C10 - C28 mg/kg	Total TPH C6 - >C28 mg/kg	Field Chloride (mg/kg)	Chloride (mg/kg)
RRAL						1000		250
3/15/10	SB-2	5	0.7	---	---	---	288	---
3/15/10	SB-2	10	0.8	---	---	---	1,322	---
3/15/10	SB-2	15	0.5	---	---	---	1,362	---
3/15/10	SB-2	20	0.8	---	---	---	1,220	---
3/15/10	SB-2	25	0.7	---	---	---	638	---
3/15/10	SB-2	30	0.3	---	---	---	2,150	---
3/15/10	SB-2	35	0.9	---	---	---	2,365	---
3/15/10	SB-2	40	0.9	---	---	---	2,084	---
3/15/10	SB-2	45	0.8	---	---	---	1,108	---
3/15/10	SB-2	50	0.9	---	---	---	2,347	---
3/15/10	SB-2	55	0.3	---	---	---	1,485	---
3/15/10	SB-2	60	0.3	---	---	---	2,639	---
3/15/10	SB-2	65	0.4	<10.0	<10.0	<20.0	3,385	3,520
3/15/10	SB-2	70	0.2	---	---	---	341	---
3/15/10	SB-2	75	0.1	---	---	---	762	---
3/15/10	SB-2	80	0.0	<10.0	<10.0	<20.0	880	672
3/15/10	SB-3	5	---	---	---	---	269	---
3/15/10	SB-3	10	---	---	---	---	1,151	---
3/15/10	SB-3	15	---	---	---	---	1,365	---
3/15/10	SB-3	20	---	---	---	---	1,308	---
3/15/10	SB-3	25	---	---	---	---	899	---
3/15/10	SB-3	30	---	---	---	---	1,332	---
3/15/10	SB-3	35	---	<10.0	<10.0	<20.0	1,865	1,800
3/15/10	SB-3	40	---	---	---	---	1,111	---
3/15/10	SB-3	45	---	---	---	---	746	---
3/15/10	SB-3	50	---	---	---	---	1,192	---
3/15/10	SB-3	55	---	---	---	---	928	---
3/15/10	SB-3	60	---	---	---	---	545	---
3/15/10	SB-3	65	---	---	---	---	577	---
3/15/10	SB-3	70	---	---	---	---	348	---
3/15/10	SB-3	75	---	<10.0	<10.0	<20.0	217	176
3/15/10	SB-4	5	0.3	---	---	---	627	---
3/15/10	SB-4	10	0.0	<10.0	<10.0	<20.0	685	752
3/15/10	SB-4	15	0.0	---	---	---	318	---
3/15/10	SB-4	20	0.0	<10.0	<10.0	<20.0	220	112
3/15/10	SB-5	5	0.7	<10.0	<10.0	<20.0	1,291	1,460
3/15/10	SB-5	10	1.0	---	---	---	181	---
3/15/10	SB-5	15	0.5	---	---	---	107	---
3/15/10	SB-5	20	0.1	<10.0	<10.0	<20.0	116	32
3/16/10	SB-6	5	0.4	---	---	---	792	---
3/16/10	SB-6	10	0.6	---	---	---	1,147	---
3/16/10	SB-6	15	0.6	---	---	---	330	---
3/16/10	SB-6	20	0.3	---	---	---	1,298	---
3/16/10	SB-6	25	0.2	---	---	---	748	---
3/16/10	SB-6	30	0.4	---	---	---	1,427	---
3/16/10	SB-6	35	0.3	<10.0	<10.0	<20.0	2,097	1,650
3/16/10	SB-6	40	0.2	---	---	---	1,260	---

Sample Date	Soil Boring Number	Sample Depth (feet BGS)	PID (ppm)	TPH (GRO) C6 - C10 mg/kg	TPH (DRO) >C10 - C28 mg/kg	Total TPH C6 - >C28 mg/kg	Field Chloride (mg/kg)	Chloride (mg/kg)
RRAL						1000		250
3/16/10	SB-6	45	0.4	---	---	---	986	---
3/16/10	SB-6	50	0.2	---	---	---	1,086	---
3/16/10	SB-6	55	0.7	---	---	---	1,090	---
3/16/10	SB-6	60	0.7	---	---	---	1,098	---
3/16/10	SB-6	65	0.4	---	---	---	1,875	---
3/16/10	SB-6	70	---	---	---	---	1,091	---
3/16/10	SB-6	75	---	---	---	---	602	---
3/16/10	SB-6	80	---	<10.0	<10.0	<20.0	556	512
3/16/10	MW-1	5	0.4	---	---	---	592	---
3/16/10	MW-1	10	0.3	<10.0	<10.0	<20.0	1,073	1,380
3/16/10	MW-1	15	0.7	---	---	---	352	---
3/16/10	MW-1	20	1.4	---	---	---	303	---
3/16/10	MW-1	25	1.0	---	---	---	306	---
3/16/10	MW-1	30	1.1	---	---	---	262	---
3/16/10	MW-1	35	0.8	---	---	---	455	---
3/16/10	MW-1	40	0.3	---	---	---	424	---
3/16/10	MW-1	45	0.6	---	---	---	302	---
3/16/10	MW-1	50	0.8	---	---	---	226	---
3/16/10	MW-1	55	0.7	---	---	---	192	---
3/16/10	MW-1	60	0.8	---	---	---	211	---
3/16/10	MW-1	65	0.8	---	---	---	174	---
3/16/10	MW-1	70	1.0	<10.0	<10.0	<20.0	115	48
3/17/10	SB-7	5	0.6	<10.0	<10.0	<20.0	1,468	1,950
3/17/10	SB-7	10	0.4	---	---	---	1,197	---
3/17/10	SB-7	15	0.3	---	---	---	449	---
3/17/10	SB-7	20	0.4	<10.0	<10.0	<20.0	206	32
3/17/10	SB-8	5	1.6	---	---	---	253	---
3/17/10	SB-8	10	1.2	<10.0	<10.0	<20.0	1,131	1,870
3/17/10	SB-8	15	0.9	---	---	---	773	---
3/17/10	SB-8	20	0.4	---	---	---	556	---
3/17/10	SB-8	25	1.4	---	---	---	441	---
3/17/10	SB-8	30	0.9	---	---	---	469	---
3/17/10	SB-8	35	0.8	---	---	---	524	---
3/17/10	SB-8	40	0.6	---	---	---	391	---
3/17/10	SB-8	45	1.8	---	---	---	320	---
3/17/10	SB-8	50	1.3	---	---	---	264	---
3/17/10	SB-8	55	0.8	<10.0	<10.0	<20.0	154	64

Notes *Samples analyzed by Cardinal Laboratories, Hobbs, New Mexico*

1. BGS Depth in feet below ground surface
- 2 mg/kg Milligrams per kilogram
- 3 GRO Gasoline Range Organics
- 4 DRO Diesel Range Organics

**APPENDIX A**

**LABORATORY DATA AND  
CHAIN OF CUSTODY DOCUMENTATION**





# 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: <u>RICE OPERATING</u>			<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																	
Project Manager: <u>HACK, RONALD</u>			P.O. #:																					
Address: <u>121 W TAYLOR</u>			Company:																					
City: <u>HOBBS</u> State: <u>NM</u> Zip: <u>88240</u>			Attn:																					
Phone #: <u>323 2174</u> Fax #:			Address:																					
Project #: _____ Project Owner:			City:																					
Project Name: <u>JOHNS P-2 LEAK</u>			State: _____ Zip: _____																					
Project Location:			Phone #:																					
Sampler Name: <u>TONY GRIFFO</u>			Fax #:																					
FOR LAB USE ONLY																								
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.		SAMPLING		CHLORIDE									
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER										
<u>H18761-1</u>		<u>VERTICAL 1 1'</u>		<u>G</u>	<u>1</u>								<u>11/17/09</u>	<u>8:40</u>										
<u>-2</u>		<u>VERTICAL 1 2'</u>		<u>G</u>	<u>1</u>								<u>11/17/09</u>	<u>8:45</u>										
<u>-3</u>		<u>VERTICAL 1 7'</u>		<u>G</u>	<u>1</u>								<u>11/17/09</u>	<u>9:30</u>										

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Relinquished By:	Date: <u>11/17/09</u>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Time: <u>10:46a</u>	Received By:	Fax Result: <input type="checkbox"/> Yes <input 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 <input type="checkbox"/> No <input type="checkbox"/> No	CHECKED BY: (Initials) 	REMARKS: <u>email results:</u> <u>hconder @ riceswd.com</u> <u>tgrieco @ riceswd.com</u> <u>jpurnis @ riceswd.com</u>	



# ARDINAL LABORATORIES

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

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

Receiving Date: 11/19/09  
Reporting Date: 11/23/09  
Project Number: NOT GIVEN  
Project Name: JUSTIS P-2 LEAK  
Project Location: NOT GIVEN

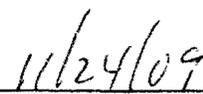
Analysis Date: 11/23/09  
Sampling Date: 11/17/09  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: ML  
Analyzed By: HM

LAB NO.	SAMPLE ID	Cl <sup>-</sup> (mg/kg)
H18762-1	VERTICAL 2 1'	1,360
H18762-2	VERTICAL 2 2'	1,780
H18762-3	VERTICAL 2 7'	1,470
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		< 0.1

METHOD: Standard Methods	4500-Cl <sup>-</sup> B
--------------------------	------------------------

Note: Analyses performed on 1:4 w:v aqueous extracts.

  
Chemist

  
Date 11/24/09

H18762 RICE

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(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>BIG STEAKS</u>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>											
Project Manager: <u>JACK CONNOR</u>		P.O. #:													
Address: <u>122 W TAYLOR</u>		Company:													
City: <u>MOSES</u> State: <u>NM</u> Zip: <u>87240</u>		Attn:													
Phone #: <u>325 2174</u> Fax #:		Address:													
Project #: _____ Project Owner:		City:													
Project Name: <u>WELLS P-2 LEAS</u>		State: _____ Zip: _____													
Project Location:		Phone #:													
Sampler Name: <u>WELL SAMPLE</u>		Fax #:													

FOR LAB USE ONLY		# CONTAINERS	MATRIX					PRESERV		SAMPLING		DATE	TIME	CHECKED BY
Lab I.D.	Sample I.D.		GROUNDWATER	WASTEWATER	SOIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER				
H18762-1	VERTICAL 2 1'	1									11/17/09	10:40		
-2	VERTICAL 2 2'	1									11/17/09	10:45		
-3	VERTICAL 2 7'	1									11/17/09	12:20		

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Relinquished By:	Date: <u>11-19-09</u> Time: <u>10:46</u>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	CHECKED BY:	
REMARKS: e-mail results: header to: mcs@swd.com to: mcs @ mcs@swd.com jsporvis @ mcs@swd.com				



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

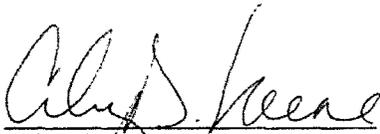
Receiving Date: 11/19/09  
Reporting Date: 11/23/09  
Project Number: NOT GIVEN  
Project Name: JUSTIS P-2 LEAK  
Project Location: NOT GIVEN

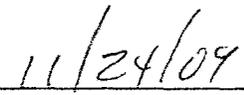
Analysis Date: 11/23/09  
Sampling Date: 11/17/09  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: ML  
Analyzed By: HM

LAB NO.	SAMPLE ID	Cl <sup>-</sup> (mg/kg)
H18763-1	VERTICAL 3 1'	336
H18763-2	VERTICAL 3 4'	832
H18763-3	VERTICAL 3 7'	544
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		< 0.1

METHOD: Standard Methods      4500-Cl<sup>-</sup>B

Note: Analyses performed on 1:4 w:v aqueous extracts.

  
Chemist

  
Date

H18763 RICE

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

Receiving Date: 03/16/10	Sampling Date: 03/15/10
Reporting Date: 04/28/10**	Sample Type: SOIL
Project Number: NOT GIVEN	Sample Condition: COOL & INTACT
Project Name: JUSTIS P-2 LEAK AND JUNCTION BOX	Sample Received By: CK
Project Location: JUSTIS P-2 LEAK AND JUNCTION BOX	Analyzed By: AB/HM/SJ

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

ANALYSIS DATE	03/19/10	03/19/10	03/16/10
H19448-1 SB-2 @ 65'	<10.0	<10.0	3,520
H19448-2 SB-2 @ 80'	<10.0	<10.0	672
H19448-3 SB-3 @ 35'	<10.0	<10.0	1,800
H19448-4 SB-3 @ 75'	<10.0	<10.0	176
H19448-5 SB-4 @ 10'	<10.0	<10.0	752
H19448-6 SB-4 @ 20'	<10.0	<10.0	112
H19448-7 SB-5 @ 5'	<10.0	<10.0	1,460
H19448-8 SB-5 @ 20' **	<10.0	<10.0	32
Quality Control	538	577	510
True Value QC	500	500	500
% Recovery	108	115	102
Relative Percent Difference	<0.1	15.5	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.

\*\*REVISED REPORT

  
\_\_\_\_\_  
Chemist

04/28/10  
\_\_\_\_\_  
Date

H19448 TCL RICE





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

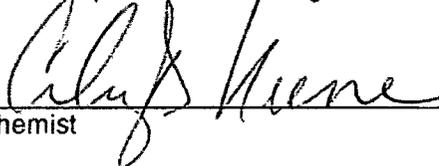
Receiving Date: 03/17/10	Sampling Date: 03/16/10
Reporting Date: 03/22/10	Sample Type: SOIL
Project Number: NOT GIVEN	Sample Condition: COOL & INTACT
Project Name: JUSTIS P-2 LEAK AND JUNCTION BOX	Sample Received By: JH
Project Location: JUSTIS P-2 LEAK AND JUNCTION BOX	Analyzed By: AB/HM

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		03/20/10	03/20/10	03/18/10
H19466-1	SB-6 @ 35'	<10.0	<10.0	1,650
H19466-2	SB-6 @ 80'	<10.0	<10.0	512
H19466-3	MW-1 @ 10'	<10.0	<10.0	1,380
H19466-4	MW-1 @ 70'	<10.0	<10.0	48
Quality Control		536	558	510
True Value QC		500	500	500
% Recovery		107	112	102
Relative Percent Difference		1.7	6.6	<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.

Reported on wet weight.

  
\_\_\_\_\_  
Chemist

03/23/10  
Date

H19466 TCL RICE

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

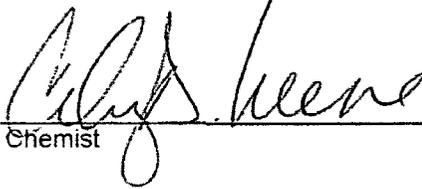
Receiving Date: 04/13/10  
Reporting Date: 04/14/10  
Project Number: NOT GIVEN  
Project Name: JUSTIS P-2 VENT & LEAK  
Project Location: T25S-R37E-SEC2 P~ LEA CO., NM

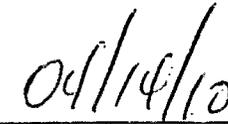
Sampling Date: 04/11/10  
Sample Type: WATER  
Sample Condition: COOL & INTACT  
Sample Received By: CK  
Analyzed By: ZL

LAB NUMBE SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE	04/14/10	04/14/10	04/14/10	04/14/10
H19663-1 MONITOR WELL #1	<0.001	<0.001	<0.001	<0.003
Quality Control	0.056	0.055	0.055	0.163
True Value QC	0.050	0.050	0.050	0.150
% Recovery	112	110	110	109
Relative Percent Difference	2.2	2.2	2.2	2.3

METHOD: EPA SW-846 8021B

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

  
\_\_\_\_\_  
Chemist

  
\_\_\_\_\_  
Date

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# Cardinal Laboratories, Inc.

101 East Marland - Hobbs, New Mexico 88240  
 Tel (575) 393-2326  
 Fax (575) 393-2478

**Company Name:** RICE Operating Company  
**Project Manager:** Hack Conder  
**Address:** 122 W Taylor Street - Hobbs, New Mexico 88240  
**Phone #:** (575) 393-9174  
**Fax #:** (575) 397-1471

**LAB Order ID #** \_\_\_\_\_  
**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**Project Name:** Justis P-2 Vent & Leak  
**Project Location:** T25S-R37E-Sec2 P ~ Lea County - New Mexico

**Analysis Request (Circle or Specify Method No.):**

TPH 418.1/TX1005 / TX1005 Extended (C35)	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol. 8260B/624	
GC/MS Semi. Vol. 8270C/825	
PCBs 8082/608	
Pesticides 8081A/608	
BOD, TSS, PH	
Moisture Content	
Cations (Ca, Mg, Na, K)	
Anions (Cl, SO4, CO3, HCO3)	
Sulfates	X
Total Dissolved Solids	X
Chlorides	X
Turn Around Time ~ 24 Hours	

LAB #	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX			PRESERVATIVE METHOD				DATE (2010)	TIME	
				WATER	SOIL	AIR	SLUDGE	HCL (2 40ml VOA)	HNO3	NaHSO4			H2SO4
H9102319	Monitor Well #1	G	3	X					2		1	4-11	12:35

MTBE 8021B/602	X
BTEX 8021B/602	
PH 418.1/TX1005 / TX1005 Extended (C35)	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol. 8260B/624	
GC/MS Semi. Vol. 8270C/825	
PCBs 8082/608	
Pesticides 8081A/608	
BOD, TSS, PH	
Moisture Content	
Cations (Ca, Mg, Na, K)	
Anions (Cl, SO4, CO3, HCO3)	
Sulfates	X
Total Dissolved Solids	X
Chlorides	X
Turn Around Time ~ 24 Hours	

**Relinquished by:** Rozanne Johnson  
**Date:** 4-13-10  
**Time:** 12:55

**Received by:** \_\_\_\_\_  
**Date:** \_\_\_\_\_  
**Time:** \_\_\_\_\_

**Relinquished by:** \_\_\_\_\_  
**Date:** \_\_\_\_\_  
**Time:** \_\_\_\_\_

**Received by:** (Laboratory Staff) \_\_\_\_\_  
**Date:** 4/13/10  
**Time:** 12:55

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

**Sample Condition:** Cool  Yes  No  
 Intact  Yes  No

**Checked By:** \_\_\_\_\_  
 (Initials) CJK

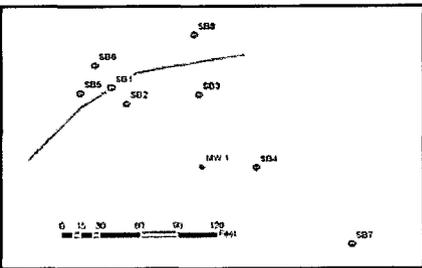
**REMARKS:** Em Email Results to hconder@riceswd.com  
 lweinheimer@riceswd.com  
 kjones@riceswd.com  
 rozanne@valornet.com

**ASAP**

**APPENDIX B**

**SOIL BORING AND MONITORING WELL LOGS**

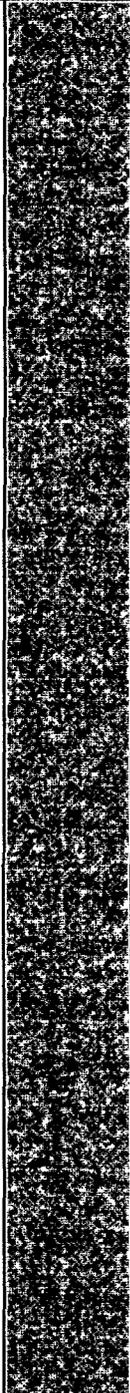
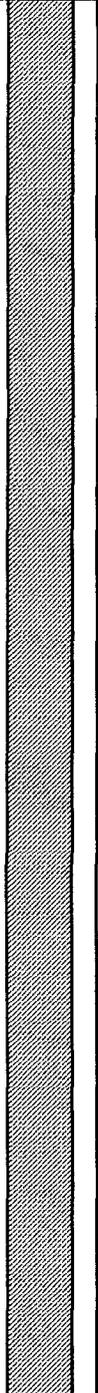
**Logger:** Cindy Crain  
**Driller:** Harrison & Cooper, Inc. Drilling  
**Consultant:** Cindy Crain  
**Drilling Method:** Air rotary  
**Start Date:** 3/15/2010  
**End Date:** 3/15/2010



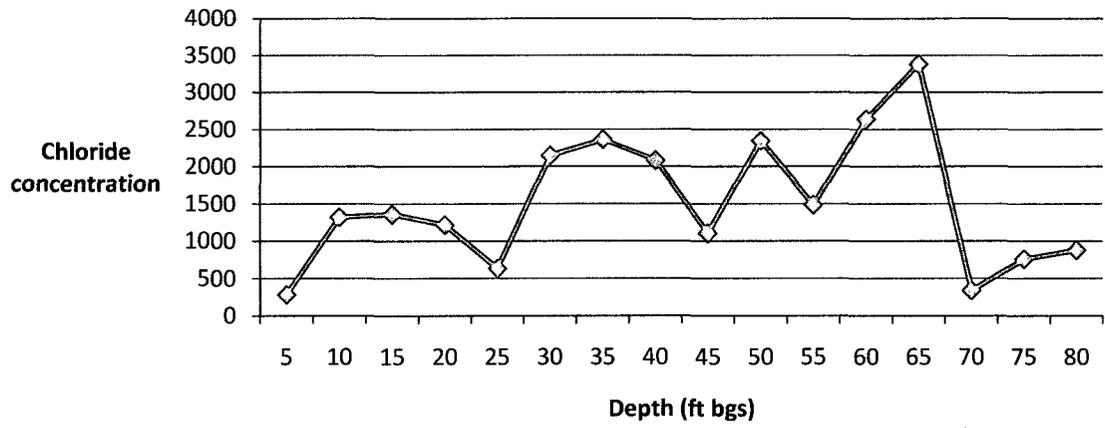
**Comments:** Split spoon sampling through 20 ft. All others were from cuttings. Located 19 ft SE of former junction box site.  
 Drafted by: Lara Weinheimer  
 TD = 80 ft      GW = 77 ft

**Project Name:** Justis jct. P-2 and leak  
**Well ID:** SB-2  
**Location:** UL/P sec. 2 T25S R37E  
**Lat:** 32°9'21.353"N      **County:** Lea  
**Long:** 103°7'39.481" W      **State:** NM

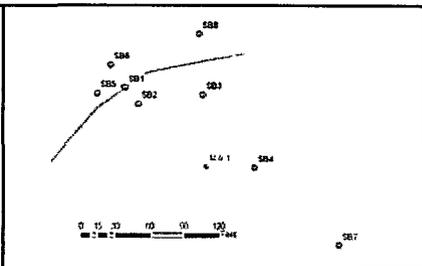
Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
				0 - 2.5 ft SILTY SAND; VERY FINE TO FINE SAND light red, poorly sorted, dry, no odor		
5	288		0.7	2.5 - 12 ft CALICHE pinkish-white, dry, no odor		
10	1322		0.8			
15	1362		0.5	12 - 28 ft SILTY SAND; FINE TO MEDIUM SAND red, poorly sorted, dry, no odor		
20	1220		0.8			
25	638		0.7			
30	2150		0.3	28 - 37 ft SILTY SAND; FINE SAND; SANDSTONE tan, moderately well sorted, dry, no odor		
35	2365		0.9			

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
40	2084		0.9	37 - 80 ft SILTY SAND; FINE SAND light to dark red, well sorted, loose, dry, no odor		
45	1108		0.8			
50	2347		0.9			
55	1485		0.3			
60	2639		0.3			
65	3385	Cl- 3520 GRO <10.0 DRO <10.0	0.4			
70	341		0.2			
75	762		0.1			
80	880	Cl- 672 GRO <10.0 DRO <10.0	0			

### Chloride concentration versus depth



**Logger:** Cindy Crain  
**Driller:** Harrison & Cooper, Inc. Drilling  
**Consultant:** Cindy Crain  
**Drilling Method:** Air rotary  
**Start Date:** 3/15/2010  
**End Date:** 3/15/2010



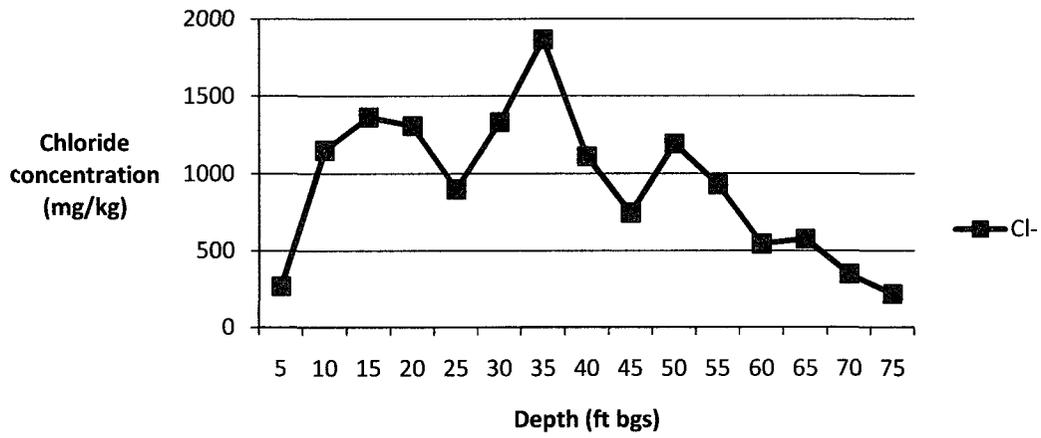
**Comments:** Split spoon sampling through 20 ft. All others were from cuttings. Located 60 ft E of former junction box site.  
 Drafted by: Lara Weinheimer  
 TD = 75 ft      GW = 77 ft

**Project Name:** Justis jct. P-2 and leak  
**Well ID:** SB-3  
**Location:** UL/P sec. 2 T25S R37E  
**Lat:** 32°9'21.428"N      **County:** Lea  
**Long:** 103°7'39.927" W      **State:** NM

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
				0 - 2 ft SILTY SAND; VERY FINE TO FINE SAND light red, poorly sorted, dry, no odor		
5	269			2.5 - 11.5 ft CALICHE pinkish-white, dry, no odor		
10	1151					
15	1365			11.5 - 28.5 ft SILTY SAND; FINE TO MEDIUM SAND red, poorly sorted, dry, no odor		
20	1308					
25	899					
30	1332					

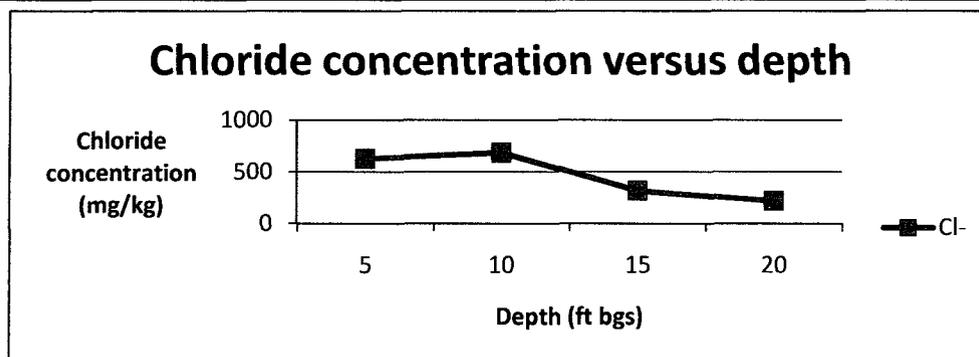
Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
				28.5 - 37 ft		
35	1865	Cl-1800		SILTY SAND; FINE SAND; SANDSTONE		
		GRO <10.0		tan, moderately well sorted, dry, no odor		
		DRO <10.0				
40	1111					
				37 - 53 ft		
45	746			SILTY SAND; FINE SAND		
				light red, well sorted, loose, dry, no odor		
50	1192					
55	928					
				53 - 75 ft		
60	545			FINE SAND		
				light tan to light red, well sorted, loose, dry, no odor		
65	577					
70	348					
75	217	Cl-176				
		GRO <10.0				
		DRO <10.0				

### Chloride concentration versus depth



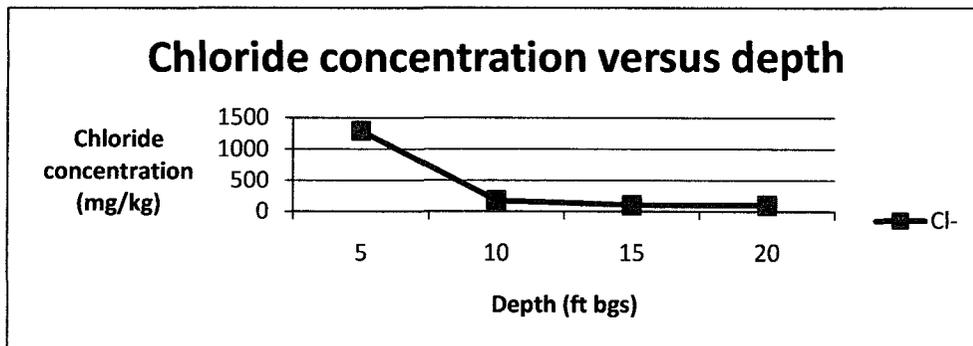
<b>Logger:</b>	Cindy Crain		
<b>Driller:</b>	Harrison & Cooper, Inc. Drilling		
<b>Consultant:</b>	Cindy Crain		
<b>Drilling Method:</b>	Air rotary		
<b>Start Date:</b>	3/15/2010		
<b>End Date:</b>	3/15/2010		
<b>Comments:</b> Split spoon sampling through 20 ft. Located 118 ft SE of former junction box site.		<b>Project Name:</b> Justis jct. P-2 and leak	<b>Well ID:</b> SB-4
Drafted by: Lara Weinheimer TD = 20 ft      GW = 77 ft		<b>Location:</b> UL/P sec. 2 T25S R37E	<b>County:</b> Lea
		<b>Lat:</b> 32°9'20.832"N	<b>State:</b> NM
		<b>Long:</b> 103°7'38.486" W	

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
				0 - 2 ft SILTY SAND; VERY FINE TO FINE SAND light red, poorly sorted, dry, no odor		
5	627		0.3	2 - 9 ft CALICHE pinkish-white, dry, no odor		
10	685	Cl-752	0	9 - 20 ft SILTY SAND; FINE TO MEDIUM SAND red, poorly sorted, dry, no odor		
		GRO <10.0				
15	318		0			
		DRO <10.0				
20	220	Cl-112	0			
		GRO <10.0				
		DRO <10.0				

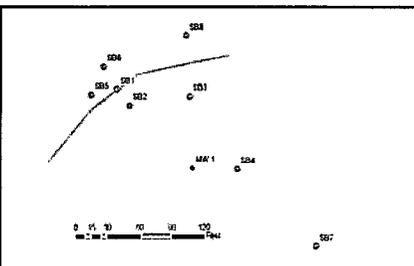


<b>Logger:</b>	Cindy Crain		
<b>Driller:</b>	Harrison & Cooper, Inc. Drilling		
<b>Consultant:</b>	Cindy Crain		
<b>Drilling Method:</b>	Air rotary		
<b>Start Date:</b>	3/15/2010		
<b>End Date:</b>	3/15/2010	<b>Project Name:</b> Justis jct. P-2 and leak	<b>Well ID:</b> SB-5
<b>Comments:</b> Split spoon sampling through 20 ft. Located 20 ft W of former junction box site.		<b>Location:</b> UL/P sec. 2 T25S R37E	
<b>Drafted by:</b> Lara Weinheimer TD = 20 ft      GW = 77 ft		<b>Lat:</b> 32°9'21.464"N	<b>County:</b> Lea
		<b>Long:</b> 103°7'39.836" W	<b>State:</b> NM

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
				0 - 1.5 ft SILTY SAND; VERY FINE TO FINE SAND tan, poorly sorted, dry, no odor		 bentonite seal
5	1291	Cl-1460 GRO <10.0 DRO <10.0	0.7	1.5 - 14 ft CALICHE pinkish-white, dry, no odor		
10	181		1			
15	107		0.5	14 - 25 ft SILTY SAND, FINE TO MEDIUM SAND		
20	116	Cl-32 GRO <10.0 DRO <10.0	0.1	red, poorly sorted, dry, no odor		



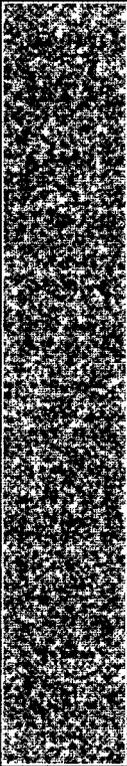
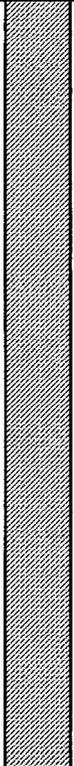
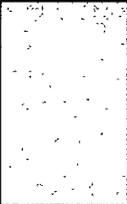
**Logger:** Cindy Crain  
**Driller:** Harrison & Cooper, Inc. Drilling  
**Consultant:** Cindy Crain  
**Drilling Method:** Air rotary  
**Start Date:** 3/16/2010  
**End Date:** 3/16/2010



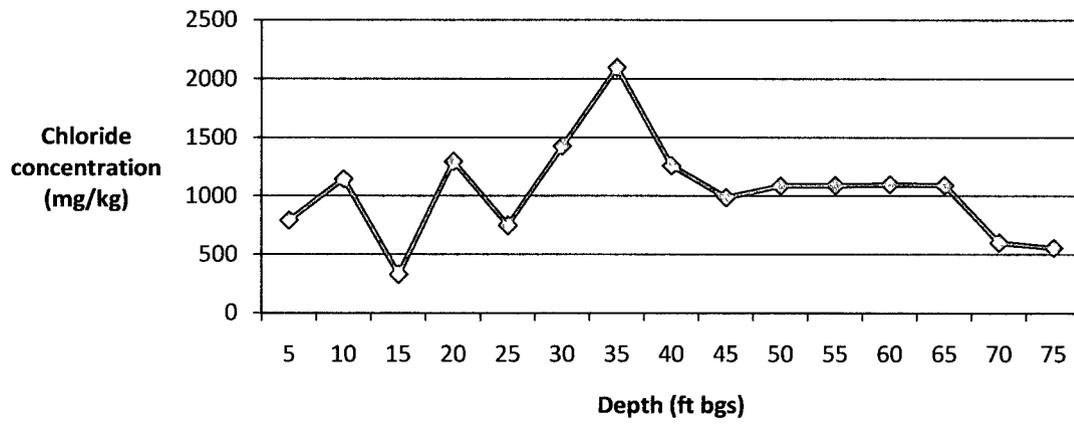
**Comments:** Split spoon sampling through 5, 10, and 20 ft. All others from cuttings. Located 20 ft N of former junction box site.  
**Drafted by:** Lara Weinheimer  
 TD = 80 ft      GW = 77 ft

**Project Name:** Justis jct. P-2 and leak  
**Well ID:** SB-6  
**Location:** UL/P sec. 2 T25S R37E  
**Lat:** 32°9'21.672"N      **County:** Lea  
**Long:** 103°7'39.72" W      **State:** NM

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
				0 - 1.5 ft SILTY SAND; VERY FINE TO FINE SAND tan, poorly sorted, dry, no odor		
5	792		0.4	1.5 - 12 ft CALICHE pinkish-white, dry, no odor		
10	1147		0.6			
15	330		0.6	12 - 27 ft SILTY SAND; FINE TO MEDIUM SAND red, poorly sorted, dry, no odor		
20	1298		0.3			
25	748		0.2			
30	1427		0.4	27 - 38 ft SILTY SAND; FINE SAND; SANDSTONE tan, moderately well sorted, dry, no odor		
35	2097	CI-1650	0.3			
		GRO <10.0				
		DRO <10.0				

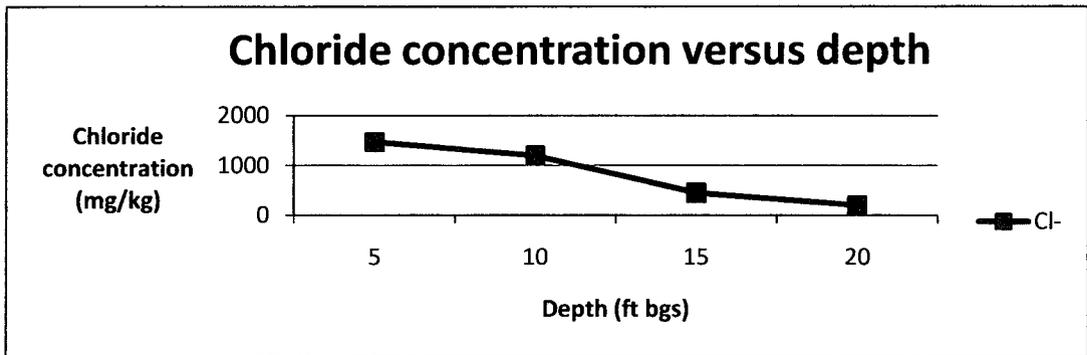
Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction		
40	1260		0.2	<p>38 - 63 ft</p> <p>SILTY SAND, FINE TO MEDIUM SAND</p> <p>red, poorly sorted, dry, no odor</p>		 <p>bentonite seal</p>		
45	986		0.4					
50	1086		0.2					
55	1090		0.7					
60	1098		0.7					
65	1875		0.4				<p>63 - 70 ft</p> <p>SILTY SAND; MEDIUM SAND</p> <p>light brown, moderately well sorted, dry, no odor</p> <p>gravelly at 68 - 70 ft</p>	
70	1091							
75	602						<p>70 - 80 ft</p> <p>FINE SAND</p> <p>red, well sorted, loose, dry, no odor</p>	
80	556	CI-512						
		GRO <10.0						
		DRO <10.0						

## Chloride concentration versus depth



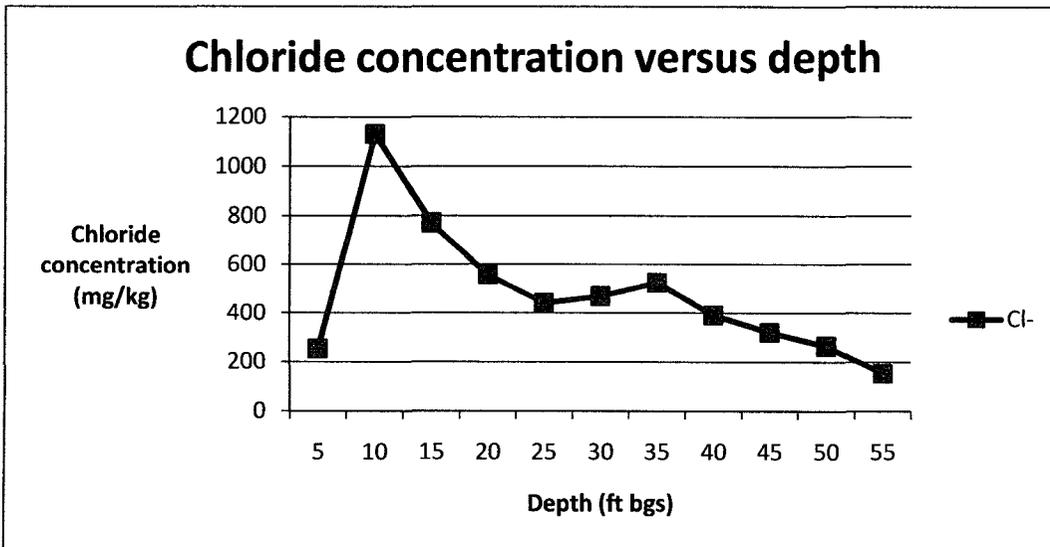
<b>Logger:</b>	Cindy Crain		
<b>Driller:</b>	Harrison & Cooper, Inc. Drilling		
<b>Consultant:</b>	Cindy Crain		
<b>Drilling Method:</b>	Air rotary		
<b>Start Date:</b>	3/17/2010		
<b>End Date:</b>	3/17/2010		
<b>Comments:</b> Split spoon sampling through 20 ft. Located 207 ft SE of former junction box site.		<b>Project Name:</b> Justis jct. P-2 and leak	<b>Well ID:</b> SB-7
<b>Drafted by:</b> Lara Weinheimer TD = 20 ft      GW = 77 ft		<b>Location:</b> UL/P sec. 2 T25S R37E <b>Lat:</b> 32°9'20.198"N <b>County:</b> Lea <b>Long:</b> 103°7'37.769" W <b>State:</b> NM	

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
				0 - 1 ft SILTY SAND, VERY FINE TO FINE SAND light brown, poorly sorted, dry, no odor		
5	1468	Cl-1950 GRO <10.0 DRO <10.0	0.6	1 - 14.5 ft CALICHE pinkish-white, dry, no odor		
10	1197		0.4			
15	449		0.3	14.5 - 20 ft SILTY SAND, FINE TO MEDIUM SAND red, poorly sorted, dry, no odor		
20	206	Cl-32 GRO <10.0 DRO <10.0	0.4			





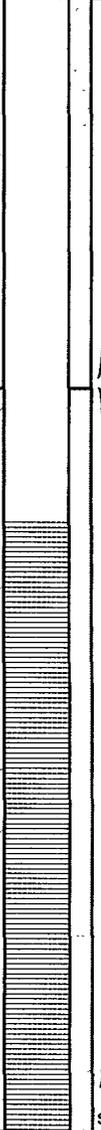
Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
35	524		0.8	33 - 47 ft SILTY SAND; FINE SAND; SANDSTONE tan, moderately well sorted, dry, no odor		
40	391		0.6			
45	320		1.8			
50	264		1.3	47 - 55 ft SILTY SAND; FINE TO MEDIUM SAND red, poorly sorted, dry, no odor		
55	154	Cl-64	0.8			
		GRO <10.0 DRO <10.0				

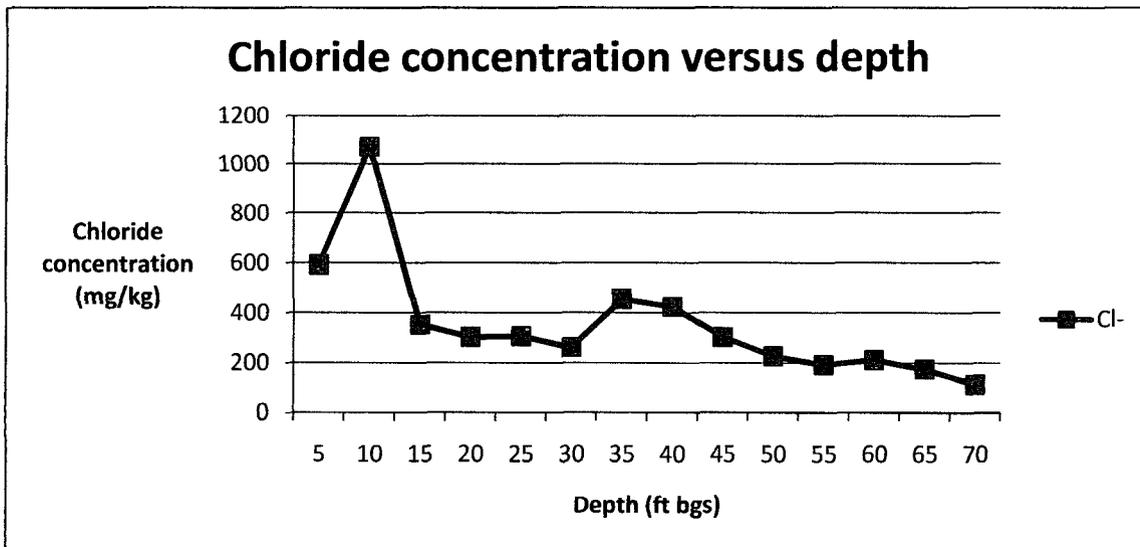


<b>Logger:</b>	None		
<b>Driller:</b>	Harrison & Cooper, Inc. Drilling		
<b>Consultant:</b>	Cindy Crain		
<b>Drilling Method:</b>	Air rotary		
<b>Start Date:</b>	3/16/10		
<b>End Date:</b>	3/16/10		

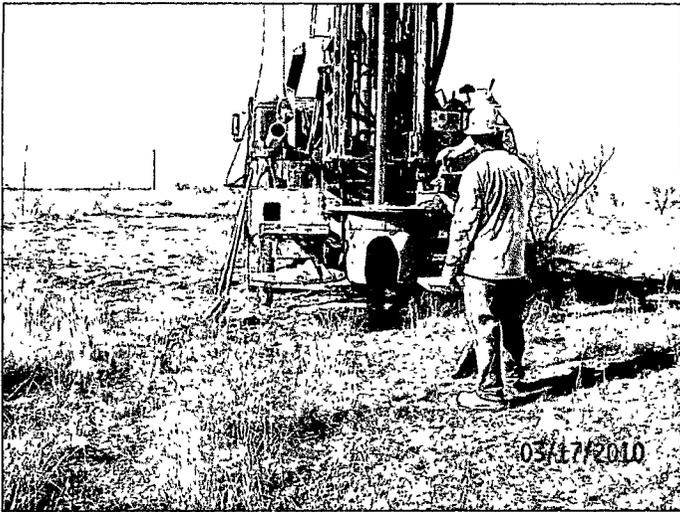
<b>Comments:</b>	Split spoon sampling through 20 ft. All others from cuttings. Located 90 ft SE of former junction box site.	<b>Project Name:</b>	Justis jct. P-2 and leak	<b>Well ID:</b>	MW-1
		<b>Location:</b>	UL/P sec. 2 T25S R37E	<b>County:</b>	LEA
		<b>Lat:</b>	N32°9'20.84"	<b>State:</b>	NM
		<b>Long:</b>	W103°7'38.898"		
		<b>TD =</b>	87 ft	<b>GW =</b>	77 ft

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Well Construction
				0 - 1 ft SILTY SAND, VERY FINE TO FINE SAND light brown, poorly sorted, dry, no odor		2 x 2 ft concrete pad
5	592		0.4	1 - 14 ft CALICHE pinkish-white, dry, no odor		on surface
10	1073	Cl-1380 GRO <10.0 DRO <10.0	0.3			
15	352		0.7	14 - 34 ft SILTY SAND; FINE TO MEDIUM SAND red, poorly sorted, dry, no odor		2 in diameter PVC
20	303		1.4			
25	306		1			
30	262		1.1			bentonite seal
35	455		0.8	34 - 44 ft SILTY SAND; FINE SAND, SANDSTONE tan, moderately well sorted, dry, no odor		
40	424		0.3			
45	302		0.6			

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Well Construction
50	226		0.8	44 - 53 ft SILTY SAND; FINE SAND red, well sorted, loose, dry, no odor		 <p>sand pack</p> <p>screen = 0.01"</p>
55	192		0.7	53 - 62 ft SILTY SAND; MEDIUM SAND light brown, moderately well sorted, dry, no odor, slightly gravelly at 60 - 62 ft		
60	211		0.8			
65	174		0.8	62 - 70 ft SILTY SAND; FINE SAND red, well sorted, loose, dry, no odor		
70	115	Cl- 48	1			
		GRO <10.0				
		DRO <10.0				
75				NO SAMPLES TAKEN		
80						
85						



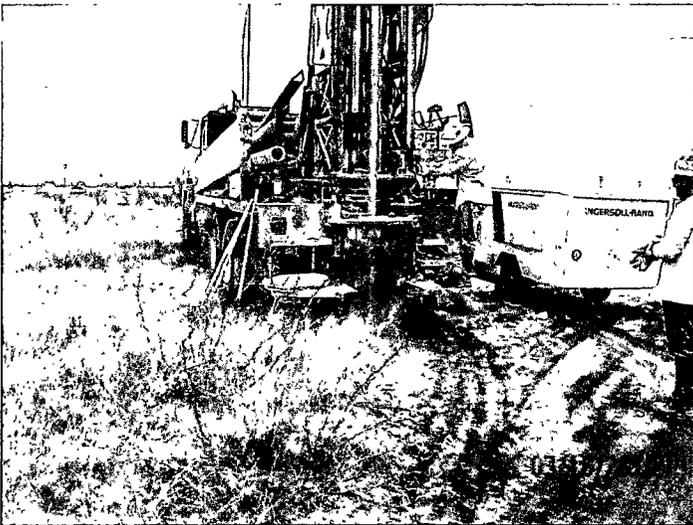
**APPENDIX C**  
**PHOTOGRAPHS**



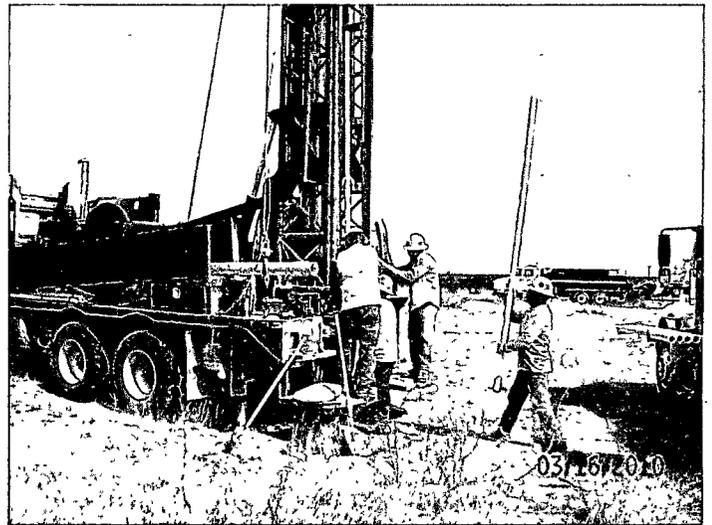
Drilling soil bores



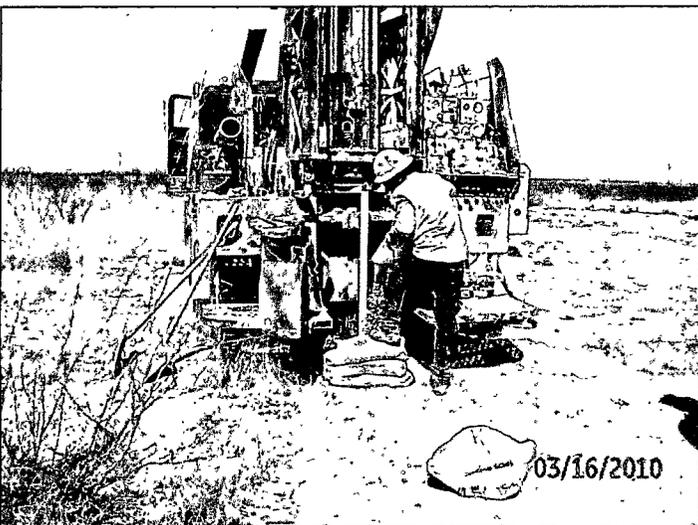
Plugging the soil bore in total with bentonite



Drilling MW-1



Setting the casing



Sealing the well with bentonite



Completed well