1R - 426-279

REPORTS

DATE:

9-15-11

Rice Environmental Consulting & Safety
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CERTIFIED MAIL
RETURN RECIEPT NO. 7008 1140 0001 3070 5887

September 15th, 2011

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

RE: **ICP REPORT**
Rice Operating Company – BD SWD System
BD jct. C-23-1 (1R426-279): UL/C sec. 23 T22S R37E

Mr. Hansen:

RICE Operating Company (ROC) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site in the BD Salt Water Disposal (SWD) system. ROC is the service provider (agent) for the BD SWD System and has no ownership of any portion of the pipeline, well, or facility. The system is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage/usage basis.

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

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

Each site shall generally have three submissions:

1. This Investigation and Characterization Plan (ICP) is proposed for gathering data and site characterization and assessment.

2. Upon evaluating the data and results from the ICP, a recommended remedy will be submitted in a Corrective Action Plan (CAP) if warranted.

3. Finally, after implementing the remedy, a Termination Request with final documentation will be submitted.

Background and Previous Work

The site is located approximately 4 miles south-east of Eunice, New Mexico at UL/C sec. 23 T22S R37E as shown on the Site Location Map (Figure 1). NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 59 +/- feet.

In 2010, ROC initiated work on the former BD C-23-1 junction box. The site was delineated using a backhoe to form a 35 ft x 5 ft x 12 ft deep excavation and soil samples were screened at regular intervals for both hydrocarbons and chlorides. From the excavation, the four-wall composite, the bottom composite and the backfill were taken to a commercial laboratory for analysis. Laboratory tests of the four-wall composite showed a chloride reading of 784 mg/kg and negligible gasoline range organics (GRO) and a diesel range organics (DRO) readings. The bottom composite showed a chloride laboratory reading of 2,200 mg/kg and negligible GRO and DRO readings. The soil was blended on site and backfilled to six feet below ground surface (bgs). Laboratory analysis of the blended backfill showed a chloride reading of 1,310 mg/kg and negligible GRO and DRO readings. At 6-5 ft bgs, a one foot thick clay layer was installed to inhibit downward movement of chlorides. A clay compaction test was performed on March 23rd, 2010. The remaining backfill was hauled to an NMOCD approved facility for disposal. Clean imported soil was used to backfill the site to ground surface.

The area was contoured to the surrounding landscape, seeded, and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on August 4th, 2010 and a junction box disclosure report was submitted to NMOCD with all the 2010 junction box closures and disclosures.

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

Proposed Work Elements

1. Conduct vertical and lateral delineation of residual soil hydrocarbons and chlorides from samples taken using a drill rig, hand auger, and/or backhoe (see Appendix B for Quality Procedures).
    a. Vertical sampling will be conducted until the following criteria are met in the field.
        i. Three samples in which the chloride concentration decreases and the third sample has a chloride concentration of $\leq$ 250 ppm; and,
        ii. Three samples in which PID readings decrease and the third sample has a PID reading of $\leq$ 100 ppm; or,
        iii. The sampling reaches the capillary fringe.
    b. Lateral sampling will be conducted until the following criteria are met in the field.
        i. A decrease is observed in chloride concentrations between lateral bores at similar depths; and,
        ii. A chloride concentration of $\leq$ 250 ppm is observed in a lateral surface sample; or,
        iii. Safety concerns impede further lateral delineation.

2. If warranted, install a monitor well to provide direct measurement of the potential groundwater impact at the site. (All monitor wells will be installed by EPA, NMOCD, and industry standards.)
3. Evaluate the risk of groundwater impact based on the information obtained.

Initial ICP Investigative Results and Recommendations

As part of the Investigation and Characterization Plan approved by NMOCD on July 20th, 2011, one soil bore was advanced through the former junction box site on September 2nd, 2011. RECS personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID) for hydrocarbons. Representative samples from the bore were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers.

Based on the initial delineation results, RECS submits the following: ROC will continue to delineate the soils surrounding the former junction box site and will delineate groundwater quality surrounding the former junction box through the installation of a near-source monitor well. Additional monitor wells may be required to fully delineate groundwater quality. After delineation of the soils surrounding the junction box and groundwater, ROC will submit a report with recommendations for a path forward.

ROC appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-9174 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:
Figures - Site location map

Figures

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

Site Map

RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

BD jct. C-23-1

LEGALS: UL/C sec. 23
T22S R37E

NMOCD Case #: 1R426-279

Figure 1

N
W E
S

0 1,700 3,400 6,800
Feet

Drawing date: 5-3-11
Drafted by: L. Weinheimer

Hansen, Edward J., EMNRD

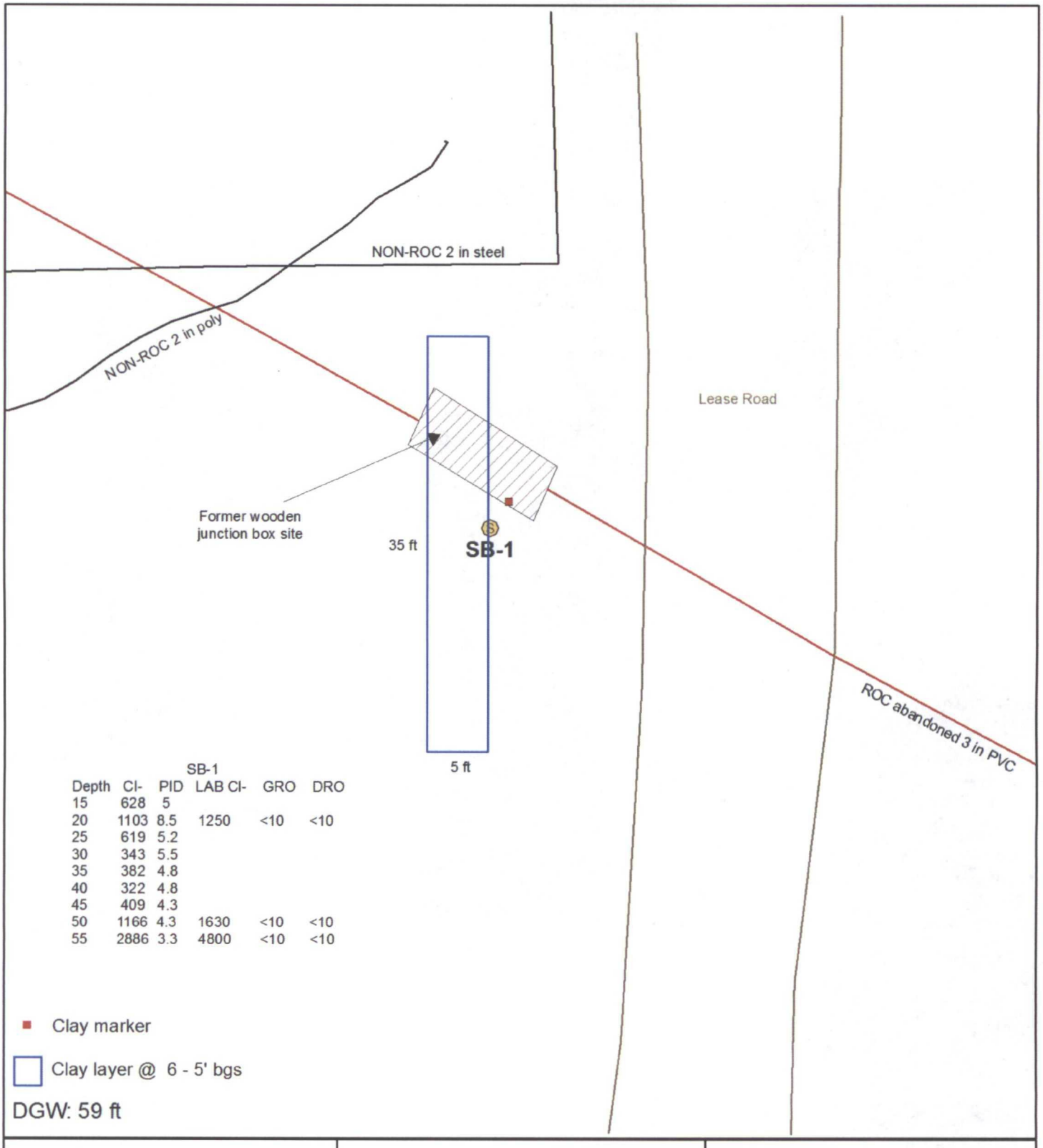
From: Hack Conder [hconder@riceswd.com]
Sent: Wednesday, September 21, 2011 5:25 PM
To: Hansen, Edward J., EMNRD
Cc: Katie Jones; Lara Weinheimer
Subject: BD C-23-1
Attachments: BD jct. C-23-1 SB-1 installation.jpg

Mr. Hansen ,

Attached is the Soil data from BD C-23-1, if you have any questions please contact me.

Thanks
Hack Conder
Rice Operating

Soil bore installation



SB-1

Depth	Cl-	PID	LAB Cl-	GRO	DRO
15	628	5			
20	1103	8.5	1250	<10	<10
25	619	5.2			
30	343	5.5			
35	382	4.8			
40	322	4.8			
45	409	4.3			
50	1166	4.3	1630	<10	<10
55	2886	3.3	4800	<10	<10

■ Clay marker

Clay layer @ 6 - 5' bgs

DGW: 59 ft

RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

BD jct. C-23-1

LEGALS: UL/C sec. 23
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N
W E
S

0 4.5 9 18
Feet

Drawing date: 9-8-11
Drafted by: L. Weinheimer