1R - 426-108

# GENERAL CORRESPONDENCE

YEAR(S):
2007

ARCADIS

*Infrastructure, buildings, environment, communications*



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Ed Hansen
New Mexico Oil Conservation Division
1220 So. Saint Francis Drive
Santa Fe, New Mexico 87505

Certified Mail Receipt No. 7002 2410 0001 5812 9886

Subject:
Investigation and Characterization Plan
Blinebry Drinkard (BD) Jct. F-25-1
T21S, R37E, Section 25, Unit F, Eunice, Lea County, New Mexico

Date:
12 July 2007

Contact:
Sharon Hall

Phone:
432 687-5400

Email:
shall@arcadis-us.com

Dear Mr. Hansen,

RICE Operating Company (ROC) has retained ARCADIS U.S, Inc. to address potential environmental concerns at the above-referenced site. ROC is the service provider (agent) for the Blinebry Drinkard (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 Partners, who provide all operating capital on a percentage ownership/usage basis. Environmental projects of this magnitude require System Partner AFE approval and work begins as funds are received. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission is requested.

For all environmental projects, ROC will choose a 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 have three submissions or a combination of:

1. This Investigation and Characterization Plan (ICP) is a proposal for data gathering 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).

3. Finally, after implementing the remedy, a closure report with final documentation will be submitted.

On behalf of ROC, ARCADIS respectfully submits this ICP for the above-referenced site.

## SITE HISTORY AND BACKGROUND

The site is located near the town of Eunice, Lea County, New Mexico (Figure 1.) The expected depth to groundwater at this site is approximately 38 feet below ground surface.

The junction box F-25-1 was eliminated and replaced with poly piping that bypasses this junction. Initial delineation began on June 23, 2004 and was completed on February 23, 2005 by trenching with a backhoe to 12 feet below ground surface (bgs). An area 30 feet x 30 feet x 12 feet-deep was excavated and back filled with blended soils to a depth 6 feet bgs. A compacted clay barrier was installed to inhibit downward chloride migration. The excavated area was then backfilled with the remaining blended excavation soil. The disturbed surface has been seeded with a blend of native vegetation and monitored for growth. An identification plate has been placed on the surface in the location of the former junction box for future environmental consideration and to identify the presence of the clay barrier.

Soil samples were analyzed in the field for chlorides using field-adapted Method 9253 and screened in the field using a photoionization detector (PID). Confirmation samples were collected from the bottom, side walls (four wall composite sample), and remediated backfill and sent to Environmental Lab of Texas for Total Petroleum Hydrocarbons (TPH) and Chloride analysis. PID readings were all low and laboratory analysis confirms gasoline range organics (GRO) and diesel range organics (DRO) were not detected.

Based on the results of the soil sampling analytical results, elevated chloride concentrations are present at the subject site as shown in Figure 2.

ROC disclosed potential groundwater impact at the site to New Mexico Oil Conservation Division (NMOCD) in an e-mail dated March 9, 2005 A disclosure report was submitted to NMOCD with all of the ROC 2004 Junction Box Reports in March 2005 per the ROC Junction Box Upgrade Workplan. The source of this impact is historical. There is no longer a threat of compounded conditions at this site because the junction has been eliminated and replaced with poly piping that bypasses this junction.

## INVESTIGATION AND CHARACTERIZATION PLAN

As discussed above existing site data suggest a potential for impairment of ground water quality. Therefore the work elements described below are designed to assist ROC in selecting an appropriate vadose zone remedy and, if necessary, a ground water remedy.

**Task 1- Collect Regional Hydrogeologic Data**

A one-half mile water well inventory will be performed. The water well inventory will include a review of water well records listed on the New Mexico State Engineer Office and United States Geological Survey (USGS) websites and windmills indicated on applicable USGS topographic maps.

**Task 2- Evaluate Concentrations of Constituents of Concern in Soil (and Groundwater**

One soil boring will be installed at the subject site at the former junction box location in order to delineate the depth of impacts to soil. Soil samples will be collected at regular intervals no greater than five feet, screened in the field using a photo ionization detector (PID) and field tested for chlorides. Soil lithology and the presence of any observed staining or odor will be recorded. Representative select samples will be submitted to a laboratory for laboratory analysis as confirmation of the field sampling.

Additional soil borings will be used to evaluate soil impacts. One soil boring will be installed in each direction (north, south east and west of the excavated area) in order to delineate the lateral extent of impacts to soil. Soil samples will be collected at regular intervals no greater than five feet, screened in the field using a photo ionization detector (PID) and field tested for chlorides. Soil lithology and the presence of any observed staining or odor will be recorded. Representative select samples will be submitted to a laboratory for laboratory analysis as confirmation of the field sampling.

If chloride and/or hydrocarbon concentrations do not decline sufficiently with depth or exceed 250 milligrams per kilogram (mg/kg) or PID readings of 100 within 10 feet of the suspected groundwater depth one soil boring will be converted to a monitor well. The monitoring well will be placed near-source to observed soil impacts.

The monitor well will be constructed, developed and sampled in accordance with Environmental Protection Agency and NMOCD standards. A groundwater sample will be collected and submitted for laboratory analysis for chlorides, BTEX and general chemistry.

If analytical results indicate that chloride and/or BTEX concentrations in groundwater exceed New Mexico Water Quality Control Commission standards, additional monitoring wells may be installed as warranted by the results of the investigation.

**Task 3 Evaluate Potential Flux from the Vadose Zone to Ground Water**

The information gathered from tasks 1 and 2 will be evaluated and utilized to design a groundwater remedy if needed. The ground water remedy that offers the greatest environmental benefit while causing the least environmental impairment will be selected. If

the evaluation demonstrates that residual constituents pose no threat to ground water quality, only a surface restoration plan protective of groundwater will be proposed. Such recommendations and findings will be presented to NMOCD in a subsequent Corrective Action Plan (CAP). When evaluating any proposed remedy or investigative work, ROC will confirm that there is a reasonable relationship between the benefits created by the proposed remedy or assessment and the economic and social costs.

A report that details the investigation activities and results will be submitted to the OCD. The report will include recommendations for further action (CAP) if necessary or for closure of the site.

Very Truly Yours,

ARCADIS U.S., Inc.

Sharon E. Hall

Sharon E. Hall
Site Evaluation Department Manager

Copies:
Carolyn Haynes- Rice Operating Company
Kristin Pope- Rice Operating Company

Attachment:

Figures 1-2

Disclosure report with field sampling results

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

BOX LOCATION

| SWD SYSTEM | JUNCTION | UNIT | SECTION | TOWNSHIP | RANGE | COUNTY | BOX DIMENSIONS - FEET | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Length | Width | Depth |
| BD | F-25-1 | F | 25 | 21S | 37E | Lea | eliminated--no box | | |

LAND TYPE: BLM _____ STATE _____ FEE LANDOWNER Mark Owen Estate OTHER _____

Depth to Groundwater 38 feet NMOCD SITE ASSESSMENT RANKING SCORE: 20

Date Started 6/23/2004 Date Completed 2/23/2005 NMOCD Witness no

Soil Excavated 400 cubic yards Excavation Length 30 Width 30 Depth 12 feet

Soil Disposed 0 cubic yards Offsite Facility n/a Location n/a

## FINAL ANALYTICAL RESULTS: **Sample Date** 7/9/2004 **Sample Depth** 12 ft

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

| Sample Location | PID ppm | GRO mg/kg | DRO mg/kg | Chloride mg/kg |
|---|---|---|---|---|
| 4-WALL COMP. | 0.1 | <10.0 | <10.0 | 585 |
| BOTTOM COMP. | 0.1 | <10.0 | <10.0 | 510 |
| REMED. BACKFILL | 0.1 | <10.0 | <10.0 | 755 |

CHLORIDE FIELD TESTS

| LOCATION | DEPTH (ft) | ppm |
|---|---|---|
| vertical at junction box | 6 | 833 |
| | 7 | 447 |
| | 8 | 444 |
| | 9 | 600 |
| | 10 | 420 |
| | 11 | 614 |
| | 12 | 635 |
| | 16 | 558 |
| | 20 | 840 |
| 15 ft WEST of junction box | 1 | 209 |
| | 2 | 149 |
| | 3 | 151 |
| | 4 | 144 |
| | 5 | 1060 |
| | 6 | 1422 |
| | 7 | 966 |
| | 8 | 1018 |
| | 9 | 765 |
| | 10 | 1021 |
| | 11 | 1394 |
| | 12 | 1574 |
| 4-wall comp. | n/a | 430 |
| bottom comp. | 12 | 532 |
| remed. backfill | n/a | 782 |

General Description of Remedial Action: This junction was eliminated with the pipeline replacement program. The box was removed and the site was delineated using a backhoe while PID screenings and chloride field tests were performed at regular intervals. Chloride concentrations did not decline with depth throughout the 30 x 30 x 12-ft deep excavation. All PID readings were relatively low and NMOCD TPH guidelines were met on the composite samples as the laboratory reported non-detect levels (<10.0 ppm). The excavated soil was blended on site and then backfilled into the excavation up to 6 ft BGS. At 6 ft, a compacted clay barrier was installed to inhibit further downward chloride migration. The remaining spoils were backfilled on top of the clay. The disturbed surface was seeded with a blend of native vegetation on 3/18/05 and will be monitored for growth. An identification plate has been placed on the surface to mark the former location of the junction box for future environmental consideration and to identify the presence of the clay barrier below. NMOCD has been notified of potential groundwater impact at this site.

**ADDITIONAL EVALUATION IS *HIGH* PRIORITY**

enclosures: chloride graphs, photos, lab results, PID field screenings, cross-section, clay test

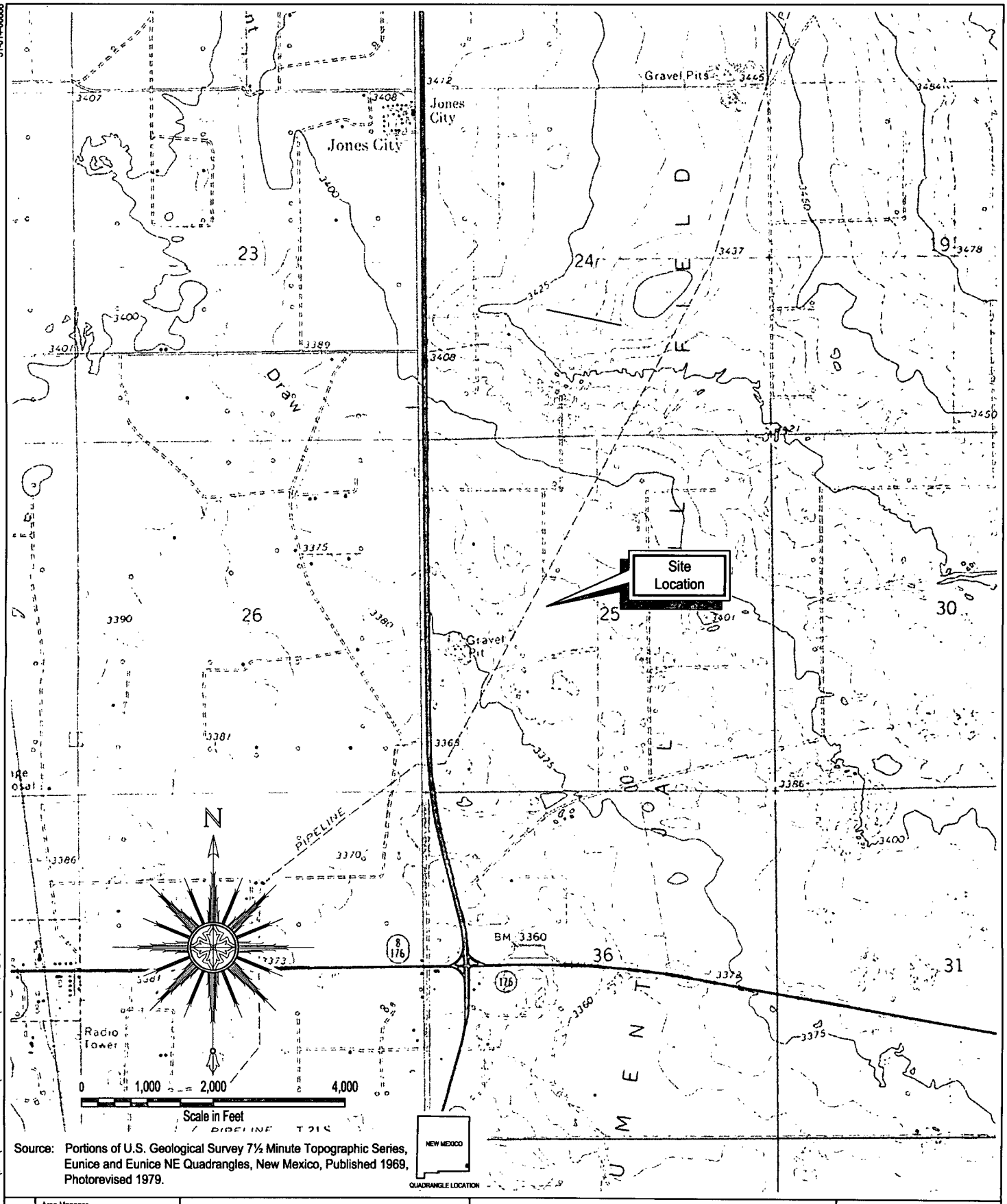
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SITE SUPERVISOR Joe Gatts SIGNATURE not available COMPANY RICE Operating Company

REPORT ASSEMBLED BY Kristin Farris Pope SIGNATURE Kristin Farris Pope

DATE 3/18/2005 TITLE Project Scientist

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




Source: Portions of U.S. Geological Survey 7½ Minute Topographic Series, Eunice and Eunice NE Quadrangles, New Mexico, Published 1969, Photorevised 1979.

| | | | |
|---|---|---|---|
| Area Manager: B. Guillette<br>Project Manager: S. Hall<br>Task Manager: R. Nanny<br>Technical Review: S. Tischer | ARCADIS<br>1004 North Big Spring Street<br>Suite 300<br>Midland, TX 79701-3383<br>Tel: 432-687-5400 Fax: 432-687-5401<br>www.arcadis-us.com | Rice Operating Company<br>Blinebry Drinkard (BD) SWD System – Jct. F-25-1<br>**Site Location Map**<br>Lea County, New Mexico | Project Number: MT000912.0001<br>Drawing Date: 12 January 2007<br>Figure: 1 |



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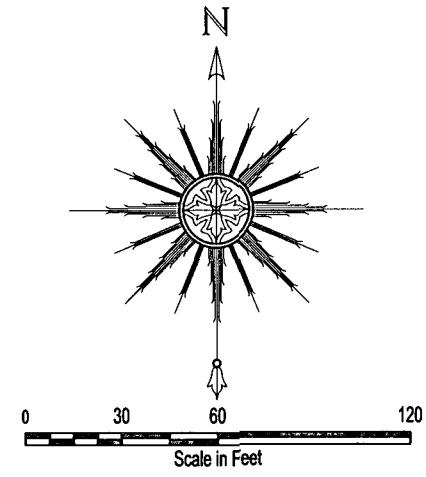


Explanation

7 | 966/585

Chloride Result (Field Results)
Soil Sample Depth (Feet)
(All Results Milligrams Per Kilogram)

| | |
|---|---|
| 1 | 209 |
| 2 | 149 |
| 3 | 151 |
| 4 | 144 |
| 5 | 1,060 |
| 6 | 1,422 |
| 7 | 966 |
| 8 | 1,018 |
| 9 | 765 |
| 10 | 1,021 |
| 11 | 1,394 |
| 12 | 1,574 |

| | |
|---|---|
| 6 | 833 |
| 7 | 447 |
| 8 | 444 |
| 9 | 600 |
| 10 | 420 |
| 11 | 614 |
| 12 | 635 |
| 16 | 558 |
| 20 | 840 |

| | |
|---|---|
| 4-Wall Composite | 430/585 |
| Bottom Composite | 532/510 |
| Remed. Backfill | 782/755 |

ROC Pipeline (Active)

ROC Pipeline (Abandoned)

31-014-00869

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Rice Operating Company
Blinebry Drinkard (BD) SWD System – Jct. F-25-1

# Soil Excavation and Sampling Results Chlorides (mg/Kg)

Lea County, New Mexico

| | |
|---|---|
| Project Number | MT000912.0001 |
| Drawing Date | 12 January 2007 |
| Figure | 2 |