

1R - 428-69

# Annual GW Mon. REPORTS

DATE:

2010

# R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

March 14, 2011

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

RECEIVED

RE: 2010 Annual Ground Water Monitoring Report  
Hobbs O-5 Vent (Historic Site), Sec 05, T19S, R38E, Unit "O"  
NMOCD Case #: 1R0428-69

MAR 15 2011

Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

Mr. Hansen,

R.T. Hicks Consultants, Ltd. is pleased to submit this 2010 Annual Ground Water Monitoring Report for the O-5 Vent (Historic Site) site located in the Hobbs Salt Water Disposal System (SWD). This report contains:

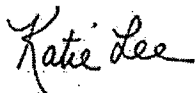
1. A table presenting all laboratory results and depth to ground water for each well at the site.
2. Graphs showing the concentration of chloride and TDS in ground water over time.
3. A plate presenting the location of the monitoring well and the most recent ground water sampling results.
4. The laboratory analysis from the most recent ground water sampling event.

Quarterly ground water monitoring continues at the site. In May 2010, ROC completed surface restoration including scraping the site, backfilling with appropriate soil, re-seeding and installing silt net fencing.

ROC is the service provider (agent) for the Hobbs Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. A consortium of oil producers who own the Hobbs Salt Water Disposal System (System Parties) provide all operating capital on a percentage ownership/usage basis. Major projects require System Parties' authorization for expenditures (AFE); approval and work begins as funds are received.

Thank you for your consideration. If you have any questions, please contact us at 505-266-5004, or Hack Conder at Rice Operating Company, 575-393-9174.

Sincerely,  
R.T. Hicks Consultants



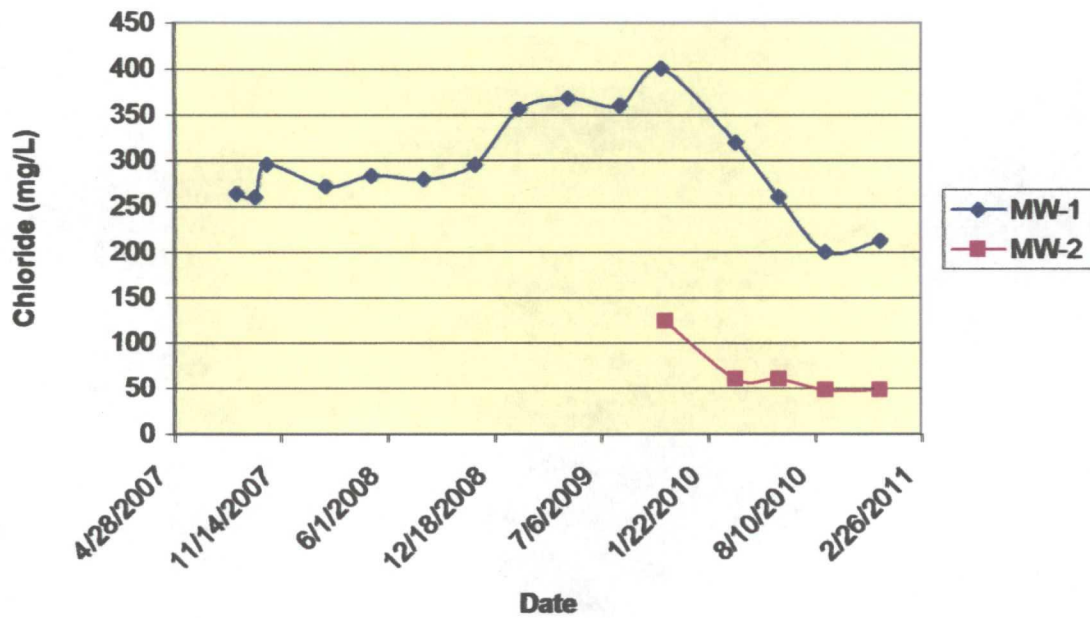
Katie Lee  
Project Scientist

Copy: Hack Conder, Rice Operating Company

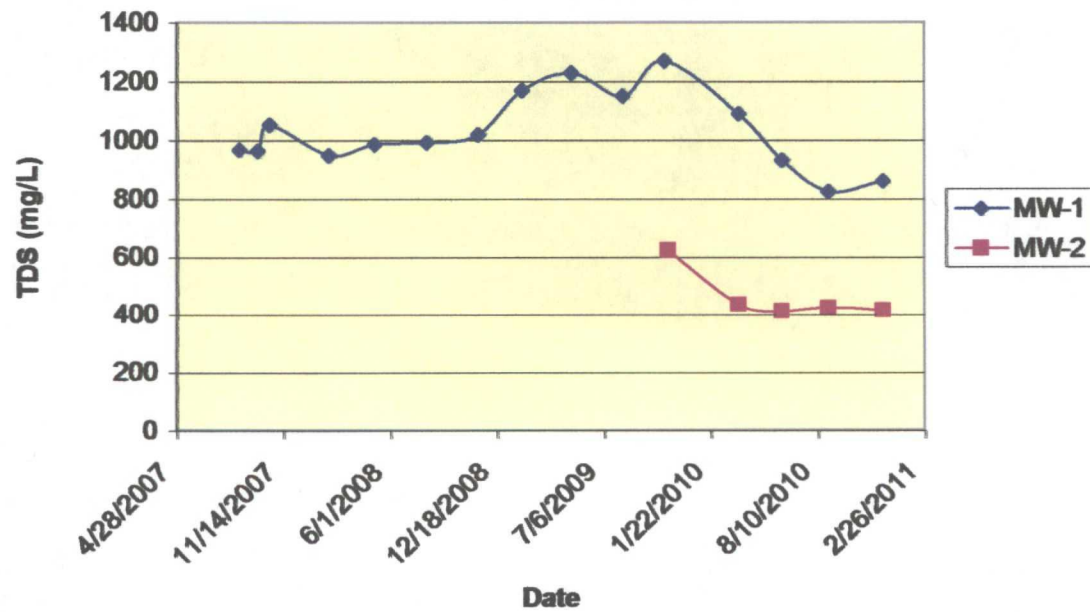
## Hobbs O-5 Vent NMOCD Case #: 1R428-69

| MW | Depth to Water<br>(ft) | Sample Date | CI  | TDS  | Benzene | Toluene | Ethyl Benzene<br>(mg/L) | Total Xylenes | Sulfate |
|----|------------------------|-------------|-----|------|---------|---------|-------------------------|---------------|---------|
| 1  | 31.62                  | 8/23/2007   | 264 | 968  | <0.002  | <0.002  | <0.002                  | <0.006        | 62.4    |
| 1  | 31.61                  | 9/27/2007   | 260 | 963  | 0.002   | <0.001  | <0.001                  | <0.003        | 57.6    |
| 1  | 31.58                  | 10/19/2007  | 296 | 1052 | 0.003   | 0.001   | <0.001                  | <0.003        | 59.3    |
| 1  | 31.63                  | 2/7/2008    | 272 | 949  | 0.003   | 0.001   | <0.001                  | <0.003        | 67.8    |
| 1  | 31.81                  | 5/2/2008    | 284 | 985  | <0.002  | <0.002  | <0.002                  | <0.006        | 75.2    |
| 1  | 32.16                  | 8/8/2008    | 280 | 992  | <0.001  | <0.001  | <0.001                  | <0.003        | 69      |
| 1  | 32.38                  | 11/12/2008  | 296 | 1020 | <0.001  | <0.001  | <0.001                  | <0.003        | 61.3    |
| 1  | 32.54                  | 2/2/2009    | 356 | 1170 | <0.001  | <0.001  | <0.001                  | <0.003        | 45      |
| 1  | 32.78                  | 5/5/2009    | 368 | 1230 | <0.001  | <0.001  | <0.001                  | <0.003        | 41.8    |
| 1  | 33.07                  | 8/10/2009   | 360 | 1150 | <0.001  | <0.001  | <0.001                  | <0.003        | 34.5    |
| 1  | 33.29                  | 10/27/2009  | 400 | 1270 | 0.002   | <0.001  | <0.001                  | <0.003        | 34.5    |
| 1  | 33.57                  | 3/15/2010   | 320 | 1090 | <0.001  | <0.001  | <0.001                  | <0.003        | 47.2    |
| 1  | 33.74                  | 6/4/2010    | 260 | 931  | <0.001  | <0.001  | <0.001                  | <0.003        | 50.3    |
| 1  | 33.54                  | 8/30/2010   | 200 | 825  | <0.001  | <0.001  | <0.001                  | <0.003        | 57      |
| 1  | 33.6                   | 12/10/2010  | 212 | 861  | <0.001  | <0.001  | <0.001                  | <0.003        | 61.7    |
| 2  | 32.83                  | 11/3/2009   | 124 | 625  | <0.001  | <0.001  | <0.001                  | <0.003        | 70      |
| 2  | 33.1                   | 3/15/2010   | 60  | 437  | <0.001  | <0.001  | <0.001                  | <0.003        | 59      |
| 2  | 33.22                  | 6/4/2010    | 60  | 413  | <0.001  | <0.001  | <0.001                  | <0.003        | 32.1    |
| 2  | 33.01                  | 8/30/2010   | 48  | 426  | <0.001  | <0.001  | <0.001                  | <0.003        | 44.5    |
| 2  | 33.14                  | 12/10/2010  | 48  | 417  | <0.001  | <0.001  | <0.001                  | <0.003        | 48.9    |

### Hobbs O-5 Vent Chloride in Ground Water

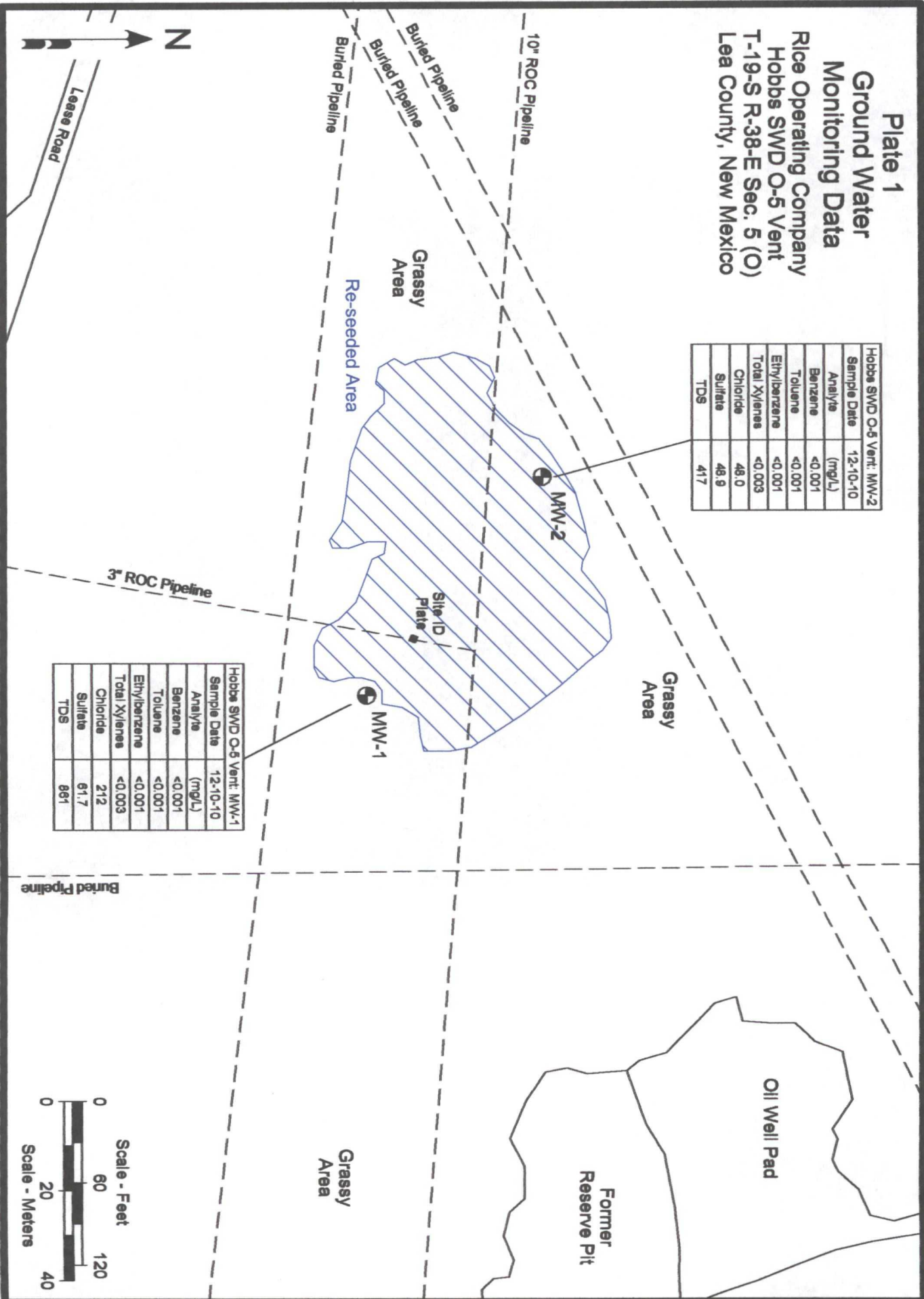


### Hobbs O-5 Vent TDS in Ground Water

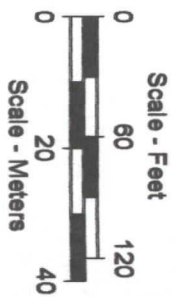


# Plate 1 Ground Water Monitoring Data Rice Operating Company Hobbs SWD O-5 Vent T-19-S R-38-E Sec. 5 (O) Lea County, New Mexico

| Hobbs SWD O-5 Vent: MW-2 |          |
|--------------------------|----------|
| Sample Date              | 12-10-10 |
| Analyte                  | (mg/L)   |
| Benzene                  | <0.001   |
| Toluene                  | <0.001   |
| Ethylbenzene             | <0.001   |
| Total Xylenes            | <0.003   |
| Chloride                 | 48.0     |
| Sulfate                  | 48.9     |
| TDS                      | 417      |



| Hobbs SWD O-5 Vent: MW-1 |          |
|--------------------------|----------|
| Sample Date              | 12-10-10 |
| Analyte                  | (mg/L)   |
| Benzene                  | <0.001   |
| Toluene                  | <0.001   |
| Ethylbenzene             | <0.001   |
| Total Xylenes            | <0.003   |
| Chloride                 | 212      |
| Sulfate                  | 61.7     |
| TDS                      | 861      |



December 21, 2010

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: HOBBS O-5 SITE

Enclosed are the results of analyses for samples received by the laboratory on 12/15/10 9:10.

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,



Celey D. Keene  
Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 12/15/2010  
Reported: 12/21/2010  
Project Name: HOBBS O-5 SITE  
Project Number: NONE GIVEN  
Project Location: T19S-R38E-SEC5 O-LEA CTY., NM

Sampling Date: 12/10/2010  
Sampling Type: Water  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: MONITOR WELL #1 (H021526-01)**

| BTEX 8021B     |        | mg/L            |            | Analyzed By: CMS |       |            |               |      |           |
|----------------|--------|-----------------|------------|------------------|-------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank     | BS    | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.001 | 0.001           | 12/17/2010 | ND               | 0.056 | 112        | 0.0500        | 19.7 |           |
| Toluene*       | <0.001 | 0.001           | 12/17/2010 | ND               | 0.054 | 108        | 0.0500        | 18.8 |           |
| Ethylbenzene*  | <0.001 | 0.001           | 12/17/2010 | ND               | 0.052 | 103        | 0.0500        | 13.7 |           |
| Total Xylenes* | <0.003 | 0.003           | 12/17/2010 | ND               | 0.150 | 100        | 0.150         | 13.0 |           |

Surrogate: 4-Bromofluorobenzene (PIL) 105 % 80-120

| Chloride, SM4500Cl-B |        | mg/L            |            | Analyzed By: HM |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 212    | 4.00            | 12/15/2010 | ND              | 104 | 104        | 100           | 0.00 |           |

| Sulfate 375.4 |        | mg/L            |            | Analyzed By: HM |      |            |               |       |           |
|---------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte       | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Sulfate       | 61.7   | 10.0            | 12/20/2010 | ND              | 38.3 | 95.8       | 40.0          | 0.536 |           |

| TDS 160.1 |        | mg/L            |            | Analyzed By: HM |    |            |               |      |           |
|-----------|--------|-----------------|------------|-----------------|----|------------|---------------|------|-----------|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS | % Recovery | True Value QC | RPD  | Qualifier |
| TDS       | 861    | 5.00            | 12/15/2010 | ND              |    |            |               | 7.87 |           |

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

## Analytical Results For:

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

Received: 12/15/2010  
Reported: 12/21/2010  
Project Name: HOBBS O-5 SITE  
Project Number: NONE GIVEN  
Project Location: T19S-R38E-SEC5 O-LEA CTY., NM

Sampling Date: 12/10/2010  
Sampling Type: Water  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

### Sample ID: MONITOR WELL #2 (H021526-02)

| BTX 8021B      |        | mg/L            |            | Analyzed By: CMS |       |            |               |      |           |
|----------------|--------|-----------------|------------|------------------|-------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank     | BS    | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.001 | 0.001           | 12/17/2010 | ND               | 0.056 | 112        | 0.0500        | 19.7 |           |
| Toluene*       | <0.001 | 0.001           | 12/17/2010 | ND               | 0.054 | 108        | 0.0500        | 18.8 |           |
| Ethylbenzene*  | <0.001 | 0.001           | 12/17/2010 | ND               | 0.052 | 103        | 0.0500        | 13.7 |           |
| Total Xylenes* | <0.003 | 0.003           | 12/17/2010 | ND               | 0.150 | 100        | 0.150         | 13.0 |           |

Surrogate: 4-Bromofluorobenzene (PII) 109 % 80-120

| Chloride, SM4500Cl-B |        | mg/L            |            | Analyzed By: HM |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 48.0   | 4.00            | 12/15/2010 | ND              | 104 | 104        | 100           | 0.00 |           |

| Sulfate 375.4 |        | mg/L            |            | Analyzed By: HM |      |            |               |       |           |
|---------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte       | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Sulfate       | 48.9   | 10.0            | 12/20/2010 | ND              | 38.3 | 95.8       | 40.0          | 0.536 |           |

| TDS 160.1 |        | mg/L            |            | Analyzed By: HM |    |            |               |      |           |
|-----------|--------|-----------------|------------|-----------------|----|------------|---------------|------|-----------|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS | % Recovery | True Value QC | RPD  | Qualifier |
| TDS       | 417    | 5.00            | 12/15/2010 | ND              |    |            |               | 13.6 |           |

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





## 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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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